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ORIGINAL LECTURES.

LECTURE ON THE TREATMENT OF TYPHOID FEVER.

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Since typhoid fever was recognized as a disease *sui generis* it has always stood as the prototype of acute infectious diseases, and on that account it should be studied with especial diligence.

After the anatomical nature of typhoid fever was determined in the first part of this century, and it was definitely separated from typhus fever, there was begun a reform in every way in the treatment of the disease. The older of the now living physicians still remember the time of the so-called indifferent therapy of typhoid of 30 to 45 years ago. The brilliant results of the water-treatment of typhoid fever (on Currie's precedent mostly by cold douches) were forgotten in the next decade, and again brought to light in the fifties. With the introduction of the cold water treatment new life was given to the dietetic treatment of fever. The care of the skin, for good bedding, for pure air in the room, for proper food and nursing of the patient, were the immediate results of the treatment by baths. In the Prussian army Brand's method has reduced the mortality from 26 to 8 per cent. Since Brand and Jürgensen published their first works on the subject the therapy of typhoid fever has been a constant object of the most zealous study, not only as regards hydropathy, but also in regard to pharmaco- and dieto-therapy. The active treatment of typhoid fever, especially the bath treatment, has been more and more widely used in private practice, and it seems that after the important moderation in the energy of the cooling was introduced, the present active therapy of typhoid fever may be regarded as a valuable and permanent progress of therapeutics. As between the extreme hydro-therapeutists and those who would "rid the world of the water pest," I do not doubt that the true road to success in the cold water treatment of typhoid fever lies between the two extremes.

Before entering into the details of the treatment of typhoid fever I will consider two cardinal objections to the active treatment of typhoid fever, which, if they correspond to the facts, are of great signification. It has been recently claimed that in spite of the treatment the mortality of typhoid fever remains the same. From this it would appear that the kind of treatment makes no difference in the ultimate result of cases of typhoid fever, and that the number of deaths in a single epidemic would be determined by factors beyond the power or control of treatment. This stand-point was taken by Port (*Archiv für Hygiene*, Bd. 81 u. 83). From the statistics of the Munich Garrison he draws the conclusion: "Low ground water causes severe infection, high ground water light infection. Treatment is without influence on the mortality, and of late years the low mortality has been due to the high ground water." But Vogl, who worked over the same material as Port, and from the clinical stand-point (*Deutsches Archiv. für klin. Medicin*, Bd. 36 u. 37), showed that Port's conclusions were not supported by his material, and that the influence of a methodical cold water treatment in diminishing the mortality of typhoid fever is incontestable.

The second objection was raised by Fiedler (*Jahresbericht der Gesellschaft für Natur- und Heilkunde zu Dresden, 1883–1884*): whether with the diminishing frequency of typhoid fever in Germany the disease had not changed in its character; whether typhoid fever had not become another and milder affection. That the mortality of typhoid fever generally has considerably diminished is shown by the numerous statistics from the different German States; and this is true not only of the large and smaller cities but also of the low country. As the cause of this one may, without violence to facts, consider the improved draining of the soil, the improvement in the dwellings, better drinking water; in short, general hygienic activity of the people, of families and of individuals. In many places in Germany, as in England, the coincidence of decrease of typhoid fever with the completion of canalization is very striking. It is not long since I showed in regard to the city of Munich that with the progress of drainage there was a gradual, and since the Spring of 1880 a a sudden decrease in the number of cases of typhoid fever, for which there could be found no other cause than the drainage of the city. Analogous results have been shown in many other German and English cities. The reverse is seen in the old condition of affairs in cities which have done little or nothing in the way of improving drainage.

The question as to the change of character of typhoid is worthy of consideration. The possibility of such a change of an infectious disease in the sense

[1] Translated, by permission of author and publishers, from advance sheets, by Wm. G. Eggleston, M.D., of Chicago.

of a diminution of its infectious properties certainly cannot be disputed, as is shown by the history of epidemic diseases; and since by drainage of the cities the germs of infection are more and more withdrawn from the soil, and thus great epidemics are now more infrequent, it is certainly conceivable that the severity of the epidemic is also lessened, since experience shows that the general mortality has a certain relation to the morbidity. But despite the diagram of Dr. Port we cannot acknowledge any influence of the state of the soil water on the typhoid morbidity and mortality, after proper drainage has been made. And when by proper drainage and hygienic measures on the part of the people generally and individuals the frequency of typhoid is lessened, and great epidemics are no more seen in the places made healthy, it is not proved thereby that the intensity of the infection in other cases is lessened. It can certainly be said that of late years the cases of typhoid fever in this city which were neglected in regard to proper diet and baths in private houses during the first and second weeks, but were otherwise in good circumstances, and were then taken to the hospital, showed on admission the same severe type, the same complications, and the same decubitus as were seen in former severe epidemics. Nor have our trials of an indifferent, *i. e.*, purely dietetic treatment, of typhoid without antipyretic treatment, which were made for the purpose of comparing the two methods, shown by their results that typhoid has become milder, or that it, as Fiedler reservedly expresses it, from a clinical and pathological-anatomical view it has taken another form. The variations which Fiedler adduces, such as the former appearance of roseola in the first week, possibly depend on local influences; at least we cannot affirm such an occurrence in Munich. The same may be said in regard to the variations from Wunderlich's normal temperature cure of typhoid. The laws of the temperature range which Wunderlich propounded for single cases are dogmas, which are scarcely true for half the cases; and we should not count every deviation from this "type" of temperature range as abnormal. Bi-hourly taking of the temperature in typhoid has shown a good deal more than appeared from the former morning and evening measurements, as has been shown by Immerman and me (Kaltwasserbehandlung des Typhus, Leipzig, 1870) and Weil (Zur Pathologie und Therapie des Abdominaltyphus, Leipzig, 1885). The same is true of certain so-called symptoms in measles and croupous pneumonia and angina: the so-called "typical" course of the temperature is not so frequent as the "atypical."

Finally, it may be said that the changes from the former course of typhoid are partly due to antipyretic treatment—the infrequency of decubitus, of furunculosis and other destructive processes of the skin, laryngeal ulcers, etc. Nor has this method of treatment been without influence on relapses of typhoid. Hence, from the observation of many thousand cases of the disease I must say that typhoid fever has certainly decreased in frequency, but its character has not changed.

The decreased mortality of typhoid fever during the last twenty years is due to two factors: 1. Important improvement in the dietetic treatment. 2. The antipyretic anti-infectious treatment. It has been justly said that it is not right to attribute the results of the present methods of treatment solely to antipyretic measures, and that we should not undervalue the influence of the improvement in dietetics of typhoid fever. Attentive nursing, careful regulation of the skin, rational feeding—these are factors of the greatest importance. But it must be remembered that measures were called out, and first made possible by the antipyretic methods, and chiefly by the cold water treatment. With the introduction of frequent baths and taking of temperature arose the necessity for trained nursing and care of the patient. The improved care of the skin is the direct outcome of the baths; and the improvement in the appetite and the corresponding effects on the stomach and intestines are to be ascribed prominently to the baths. It was seen that assimilable food could be given in large quantities, and that it could be assimilated, and that the oxydation of the albumen of the organism, so much increased by the fever, was less with the antifebrile treatment; and from these two facts appeared the important result that the body generally, as well as each individual organ, came out of the infectious process with less damage than formerly, and that the patient's ability to work was restored more quickly than by the former indifferent treatment. Rightly has Vogl said that it is not enough to know that the patient has escaped from the infection, but we should also know in what condition the whole organism and each particular organ has come out from the disease. The question as to the amount of damage, and in how far antipyretic treatment can prevent this damage, can only be determined by continual determinations of the loss of weight, the duration of the inability to work, and an analysis of the convalescence under the different methods of treatment. Vogl has already shown by a series of cases that by his method of strict water-treatment the loss of weight is only about twice as great as in croupous pneumonia, and that after the conclusion of the emaciating period, which is 24 days in typhoid and 10 days in pneumonia, the period of return to the old weight is 17 days in typhoid and 18 in pneumonia. This is certainly strong evidence in favor of the strict antipyretic treatment, and so much the more so as the material for observation in these cases (soldiers) was much more favorable for exact comparison, on account of similarity of constitution, than in civil hospitals.

There are many skeptics to whom these facts will not be proof; the stock answer of these doubters is: "You can prove anything by statistics." But it is seen that the authors who dispute the value of statistics use them for their one-sided views. Observation at the bed-side shows the value of the antifebrile anti-infectious method of treatment.

I have already shown you at the bed-side the different methods of treating typhoid fever. I have shown you cases in which in spite of the severity of the symptoms and the height of the fever only a purely dietetic treatment was used. On the other

hand you have seen cases of equal intensity of infection which were treated by moderately cooling hydrotherapy and antipyretic drugs. In this way you have had the opportunity of seeing how continually high was the fever under the purely dietetic treatment, how severely the brain was affected, how great the muscular weakness, and how various the incidental symptoms. In patients treated antipyretically, on the other hand, you have seen after the bath often marked reduction of temperature, moderation of the pulse and respiratory movements, restful sleep, and, especially, immediately after the bath free sensorium, clear vision, a fresh countenance, greater muscular strength, a longing for food. The difference is most clearly shown by the cases which come into the hospital in the second or third week, after a so called indifferent treatment up to this time. These people are usually in tolerably good circumstances, working people, artisans, students, and are the most severe cases; they show most clearly how important is a methodical treatment from the beginning of the disease, and how the prognosis is rendered worse the later the patient comes under such methodical treatment. Liebermeister and Hagenbach have pointed out these facts in their excellent work on the use of cold water in febrile diseases, and I cannot sufficiently emphasize their importance. Do not mistake my meaning: I do not claim that a patient cannot receive in private practice the same methodical treatment as in the hospital; on the other hand, there are many factors that obtain in private practice that are more favorable than in a hospital, such as food, care and nursing. By the above remarks I mean cases in which lonely young people who cannot get such attention, baths, ventilation, change of bed, etc., as they should have during the first weeks of the disease. Such patients present the most severe type of typhoid fever, with all the secondary symptoms and complications that we were in the habit of seeing ten years ago and more in the majority of cases.

We will first consider the dietetic treatment, in its widest sense, which has to do not only with the feeding of the patient but also with the nursing and care, the bedding, ventilation, moving, and psychical and intellectual activity of the patient. To begin the methodical treatment of a case of typhoid fever there must be an appropriate room for the patient and a trained nurse, male or female.

An appropriate sick room for the patient should be quiet, if possible not opening on the street, roomy and easily ventilated, and so much the better if a small room adjoins in which baths can be given. It is absolutely essential that quiet reign in the room and in the immediate surroundings; unless this be the case the irritable nervous system is still more irritated by the continual noise. In cities, however, these conditions are hard to fulfil, but we can demand that the largest and otherwise most suitable room in the house be used, and even that the "best room," the parlor, be given up to the patient. It is important that there be a second bed in the room, standing near the patient's bed, to which the patient can be lifted when his bed is soiled or when it is otherwise necessary to arrange his own. And a frequent change of beds is especially gratifying to the patient; it is very pleasant to be lifted from his hot bed and tumbled bed-linen to a fresh cool bed, and frequently it causes a half-hour's refreshing sleep.

The care and nursing of the patient must be entrusted to a trained nurse. It is one of the most important points in the treatment that there be correct, reliable and uniformly quiet nursing, that the temperature be taken by a skillful hand, that the baths, the cleansing, the feeding, the administration of medicines, etc., be all punctually and quietly done, and that this should be done day and night. Nursing of the patient by female relatives is to be advised against, as decidedly objectionable from the standpoint of the physician. They are too much interested in the case, disturb him, ask questions, and rob him of rest. He should have complete physical and bodily rest, and not have his attention called to his surroundings. Nor should the patient have visitors—not even his most intimate friends. Until far advanced in convalesence there should be no visitors, no conversation, no intellectual activity or excitement. The nervous system and heart are extremely exhaustible, and any exertion of the mind, any agitation of the heart may cause bad results.

In all cases the patient must be absolutely prohibited from moving himself or getting out of bed, even to go to stool, or from one bed to the other. It is not infrequent that patients in late stages of typhoid fever, in attempting sudden muscular action, such as standing, die suddenly from heart paralysis due to suddenly increased blood-pressure. So, too, emboli of the pulmonary arteries, by sudden dislodgment of autochthonous heart thrombi, may be caused in this way. And not less dangerous are such bodily movements for the ulcerated and meteorismic intestine, which may be ruptured by sudden compression of the contracting abdominal and psoas muscles. The patient should be lifted from one bed to the other, and should pass his urine and fæces while lying down, or held in a half upright position by the nurse.

Especial attention should be given to the ventilation of the sick room. When the weather permits the upper window in the room should be open day and night. In winter the room should be thoroughly aired at least three or four times daily.

The greatest order and cleanliness should prevail in the sick room, and everything which can cause uncleanliness or smell should be removed.

It is the duty of the nurse to record regularly the temperature (two or three times hourly), frequency of the pulse, of respiration, frequency and quality of the stools, etc. The physician can then, at each visit, see the condition during the last few hours by a glance at the record.

A water mattrass as long and wide as the bed is indispensable in severe cases for the prevention of bedsores. When it is properly filled the patient rests very easy upon it, with no pressure on the sacrum. It should be so filled that the patient's body, by reason of its weight, does not press on the bottom of the mattrass, and that there are no air bubbles in the mattrass. The physician should see to this, as the best nurses cannot always be depended on. Some of

these seem to be small matters, but the smallest matters may be very important for the well-being of the patient. The round air-pillows found in many families should not be used, as the very thing that we wish to avoid, circulatory troubles from pressure, will be produced by these things along the whole circumference of the soft parts pressed into the ring. One day's use of such apparatus will produce a cyanotic condition of the skin.

The back, and other parts of the patient upon which he lies, should be rubbed once or twice daily with spirituous solutions, such as weak warm rum, Cologne water, etc. They not only improve the subjective feeling of the patient, but also excite the circulation of the parts pressed upon, and at the same time act well upon the nervous system through the organs of smell. Any one who has ever been in such a condition knows how much these little things add to the comfort of the patient.

We now come to the most important part of the treatment of typhoid fever—the feeding of the patient. Thirty years ago oat and barley water was the only food allowed in *febris nervosa*, as typhoid fever was then called; wine was allowed in convalescence, but not during the febrile period. Then came a time when albuminous food was forbidden on the ground that it would be but adding oil to fire. A change for the better came from England, where fluid albuminous food and stimulants, especially alcoholics, were given from the beginning of the disease, and the German physician was accused of keeping his typhoid fever patient hungry. At first the German physicians were very cautious with albuminous and alcoholic foods, but it was soon shown that under better feeding the patient withstood the disease much more easily, that less strength and flesh were lost, the convalescence was more rapid, and that less time was lost from work. The experiments of Jos. Bauer, Künstle and H. von Hösslin, made at the Munich Clinical Institute, and which showed that on the one hand the fever was not increased by giving fluid albuminous food and alcohol, and that on the other hand a large part of the nitrogenous food was absorbed in spite of the fever and diarrhœa, that it was of benefit to the organism, and that at all events the consumption of the albumen of the body was limited—these researches did much to naturalize a methodical good feeding in Germany. Of course no pure albuminous food is given, and still less fatty food. We must adhere as closely as possible to the normal proportions of food stuffs for the healthy organism as given by Voit, with the special consideration that fats are taken with difficulty by fever patients, best in milk, and that the carbo-hydrates are not only best taken and best borne, but that they markedly limit the consumption of the albuminous and fatty matters of the body.

Especial consideration must also be given to the changes and variety in taste and in the consistence of the food. Nothing is so repugnant to the normal appetite and stomach as sameness in form and kind of food, and the typhoid fever patient is, possibly on account of his small appetite and weakened digestion, still more sensitive to sameness of diet. Careful attention should therefore be given to variety of fluid food. I say "fluid food," because solid and pudding-like foods cannot be given on account of the condition of the ileum, the ulcers of which might be irritated or ruptured.

A large variety of preparations can be made from the carbo-hydrates. Starch, dextrin and sugar may be given in various forms, both in soup and drink; they are used through the whole course of the disease in mucilaginous soups. Oat and barley water, as thin as possible, is to be recommended as drink; by the addition of sugar, cinnamon or wine, etc., variety may be given to the taste. Then there are the manifold compounds of starchy and meat soups. These should all be strained, and solid particles removed from them. Clear meat broth, with or without yolk of egg, meat extracts, etc., are also recommended. The meat broths must supply the necessary fatty food, as also the butter added to the soups and the milk. Milk is the most complete mixture of albumen, fat and carbo-hydrates, and is an excellent food in typhoid fever, but too much of it will cause uneasiness in the stomach. Unfortunately, too, many persons cannot take it at all. Usually I do not give more than one pint in 24 hours.

In regard to other albuminous food I especially recommend freshly expressed meat juice, which, in so far as concerns digestibility, is preferable to eggs, etc. In our hospital 15 or 20 pounds of beef are cut in pieces as large as the hand, a piece of linen cloth placed between each two pieces, and the whole put into the meat press (Reulaux's) The juice which escapes from the press consists of serum, lymph and blood; it is placed in a porcelain vessel and used as needed. The reaction of the juice is generally slightly acid when it comes from the press; it must therefore be placed on ice, and should be prepared fresh every 24 hours. About 150 or 200 grams should be used during 24 hours. As, according to Voit and Bauer, this juice contains 6 per cent. of albumen, the consumption of albumen during the day would thus be from 9 to 12 grams. It should be given partly in teaspoonfuls, as medicine, and partly in the soup (2 tablespoonfuls to the cup). The soup should not be over 46° C. (114.8° F.), because the albumen of the juice would be coagulated; and if the broth is too hot it must be cooled before the juice is added. For cases in which all food is rejected by the stomach Dr. Ludwig, Physician to the German Hospital in London, uses a frozen meat juice which is well retained. Meat juice is preferable to egg albumen and yolk of egg as a food on account of its greater digestibility, and on account of the fact that a patient will take it for weeks without repugnance, whereas he would soon refuse the daily use of egg-albumen. In further favor of meat juice is the fact that it does not cause the slightest digestive troubles, such as eructations, gastric oppression, or flatulence in typhoid fever. I have used it daily for twelve years, in thousands of cases, not only of typhoid fever but of other diseases, and can recommend it most highly. The meat preparations of Kochs and Kemmerich, as well as the Rosenthal-Leube meat solution, are also to be recommended, but the taste of these prepara-

tions often causes eructations, and prevents their use for any length of time, which is not the case with expressed meat juice. Meat extract should be added to broths and soup in small quantity from the beginning of treatment, not merely on account of the taste, but as a stimulant to the nervous system. No more than a small quantity on the end of a knife should be used to the cupful of soup, so that the taste may not be too pronounced.

The addition of yolk of egg to the soup easily becomes repugnant to the patient, causing eructations and abdominal uneasiness. As a rule, more than three eggs during the day should not be used, though account must be taken of individual digestibility and idiosyncrasies. A very judicious combination is yolk of egg with brandy, in the form of Stokes's brandy and egg mixture. The addition of butter to the soup improves its taste as well as its quality as a food; as is true of the addition of salt.

I use wine from the beginning of the disease in the form of light non-acid white or red wines, about a pint a day. According to my experience the often used red wine cold in active intestinal symptoms (profuse diarrhœa, meteorism) is not favorable; but when it is warm, in the form of mulled wine (half a pint of red wine cooked with cloves, cinnamon and sugar), has an excellent effect on the diarrhœa and meteorism; so, too, tea with rum, grog made of good cognac, and taken not too hot. I also use cognac regularly in the form of Stokes's brandy and egg mixture as medicine, a tablespoonful every two hours. It consists of the yolk of two eggs, cognac 50, cinnamon water 150, simple syrup 30 grams. The taste is exceedingly pleasant.

It will be seen that our typhoid diet contains a tolerably large quantity of albumen, fat and carbo-hydrates, though the albuminous matters are in proportionately larger quantities than the carbo-hydrates, as compared with the usual health diet. Renk calculated that in my clinic the proportion in the daily diet of a typhoid fever patient, which the patient easily took, was 91 parts of albumen, 78 of fat, and 100 of carbo-hydrates. In his typhoid fever diet at the Munich Military Hospital Vogl uses a proportion of 60 of albumen, 45 of fat, and 200 of carbo-hydrates, and this is nearer to the proportion for the healthy man, which Voit places at 85 albumen, 30 fat, and 300 carbo-hydrates, and Forster for the non-working public dependents at 67 albumen, 38 fat, and 266 carbo-hydrates. On account of the consumption of organic albumen in typhoid fever the amount of albuminous food must be proportionately larger. The researches of H. von Hösslin and Vogl show in the most unmistakable manner that organic consumption is limited by such diet, and that the duration of convalescence is shortened.

The preparations of lime are also useful, as the lime can preserve a large part of the albumen from decomposition (Voit, Senator). They may be used in the form of jellies, best prepared from fresh calves' feet with white wine. On account of their refreshing and pure taste they are very grateful to the patients, and may be given as a kind of cordial between other meal-times.

It need scarcely be said that the energy of the feeding and the use of stimulants should correspond with the intensity of the disease; in a mild case, with a good constitution and moderate fever, it is not necessary to feed with the same energy as in a severe case with high fever, weak heart and considerable local lesion in the ileum. But it is advisable at the beginning of each case, even the mildest, to regard it as one which in the second or third week may become severe; and on this account the organic consumption must be prevented as much as possible by good feeding. But as a rule, the feeding and stimulants should be proportioned to the disease.

A diet table should be made out for the 24 hours, so that the attendants may follow it punctually and exactly, and thus the food and stimulants will be given at the right time. As a rule it is advisable, in severe cases, to give food every two hours, and drink (barley water, wine) and medicine between meal times. In this way the whole quantity of fluid food can be given, and the necessary variety given. The patient should be fed at night as well as during the day, but in mild cases consideration must be had for the patient if asleep. But in severe cases the two hour rule must be rigidly adhered to.

In regard to the diet of convalescence, it is well to follow the usual diet of health, though somewhat modified; but from the beginning of convalescence, that is from the first feverless day, I order fluid diet (except that biscuit may be soaked in the fluid food) for five days. This may savor somewhat of routine, especially to those who allow solid food during the whole course of the disease; but I recommend this nevertheless. The return to solid food should be as follows: First breakfast, tea with biscuit, one soft-boiled egg; second breakfast, 100 grams of finely minced raw bacon with wheat bread crumbs. Noon, 150 grams of pigeon, young chicken, partridge, finely minced in soup; later with a mild sauce and a tablespoonful of *purée* of potato (prepared with milk), with wine or export beer. Afternoon, tea with biscuit or cakes. Supper, mush and milk, two soft-boiled eggs, some raw bacon. This may soon be followed by calves' feet for breakfast, then an English broiled beefsteak or cotelettes of mutton with compote; and in the evening strengthening soup and some beer. At this stage, when the patient thinks of nothing but eating, something new in the way of food must be given daily. This is less the business of the physician than of the cook, but the physician should see to it that the food is properly prepared and digestible. Fruit jellies and compotes, as of pears and apples, are very grateful now, as also wine and calves foot jelly, and rice-meal or grits well cooked, etc. Raw fruit is not without danger, and is best withheld during the first three or six weeks after the decline of fever, especially as cooked fruit in the form of compotes may be allowed in small quantities every day. It is very pleasant for the patient to have something between meals to prevent his feeling hungry; a cup of meat broth or wine jelly, a soft boiled egg, a few oysters, or some caviar with butter and wheaten bread, and a glass of Madeira or Chablis may be given. *(To be concluded.)*

ORIGINAL ARTICLES.

PATHOLOGY, DIAGNOSIS AND TREATMENT OF PERFORATION OF THE APPENDIX VERMIFORMIS.

Read in the Section on Surgery at the Thirty-Eighth Annual Meeting of the American Medical Association, June, 1887.

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Lest the title of my paper should lead to the impression that I have made observations of a practical nature on this grave condition, calculated to serve as a guide to the practitioner, let me announce at the outset that my inquiry is directed to the discussing of means for the clearing away of the doubts that cluster around perforation of the vermiform appendage.

It is highly probable that many of the cases which run the ordinary course of typhlitis may originate in a slight yielding of the coats of the appendix, that allows an exudation of its contents and sets up a local inflammation in the neighboring tissues, with a shutting in of the pus by adhesive inflammation between the serous membranes around. Such cases having the effects confined to a limited area of the abdominal cavity do not present the phenomena of general peritonitis, but retain the characteristics of a circumscribed inflammation.

Having treated of the "Surgical Relations of the Ileo-cæcal Region" in a paper laid before this body at its last meeting, and having contributed a paper on the "Surgery of the Ileo-cæcal Connections" to the October, 1886, number of *Gaillard's Medical Journal*, I must presume upon an acquaintance with the points therein presented. My attention will therefore be confined to the peculiar phenomena connected with perforation of the vermiform appendage, so far as they are capable of being considered separately from other forms of intestinal perforation, and peritoneal inflammation from other causes.

The anatomical seat of the disorder is so definitely fixed in its commencement, that it would seem a simple matter to diagnosticate the origin of the symptoms; yet practically it proves a most difficult thing to differentiate the train of disorders associated with this accident from those troubles growing out of derangements in the ileo-cæcal region from other causes. The sympathetic disturbance in the abdominal viscera from local lesions are very obscure, and it is observed that in strangulated hernia, for instance, the pain is not located at the constriction but at the umbilicus. In the case of strangulated inguinal hernia for which Dr. N. B. Carson practiced resection successfully, it is stated, that "while skating, the patient was suddenly seized with a severe pain in the abdomen, which he did not locate definitely." Other instances might be cited in illustration of the absence of local symptoms in acute cases of obstruction of the bowels; and the history of the local origin of general peritonitis from perforation of the intestines, rarely presents an indication of the point at which it has occurred. The same is observed in the early manifestations from perforation of the appendix. Dr. J. D. Bryant's fatal case of perforation of the vermiform appendix, exhibits strikingly the want of those local symptoms which might serve as a guide to the nature of the trouble at the outset. He states that the patient has been suddenly attacked with a moderately severe griping pain in the epigastric region. He noticed no pain or tenderness in the right iliac region. About fifteen hours afterward, the pain became more severe than at the outset, and was still located in the epigastric region. The tenderness on pressure was general, but was best marked, however, at the lower portion of the abdomen. No isolated point of extra tenderness was discovered. All pain was referred to the epigastric region, the same as at the outset of the attack.

In the case reported by Dr. Tiffany and in two of my own cases there has been a feature which has not been noted by others so far as I have observed, the pain in the privates. If it should turn out that this is present in any considerable proportion of the cases of perforation of the vermiform appendage, it would prove an important element in the diagnosis. It is difficult to trace any sympathy between the inflammatory process which accompanies the exudation from this particular locality, and the genital organs; nor does it appear that there is any influence that could be operative in perforation of the appendix rather than in typhlitis. But the fact of pain in a marked degree being present in these three cases, which were verified as cases of perforation of the appendix, stands forth as an indication which may lead to some practical inference in making up the differential diagnosis of this condition. It is desirable that other observers should direct their attention to this point in the early stage of trouble in the cæcal region, and report upon its presence or absence when the subsequent progress of the cases confirms the reality of this affection.

This occurrence would seem to be more frequent in later years, if the fact of its existence formerly has not been overlooked in its effects being confounded with peritonitis from other local lesions. It is evident that some of the cases are only brought to light upon a necropsy being instituted, and the profession now very properly insists on such examinations in obscure cases. Unfortunately, the people are not educated up to the point of assenting to a proposition by the medical attendant to open up a body for the good of others and the promotion of science; and we often have difficulties to encounter in securing a post mortem examination of a patient. But perseverance will generally be rewarded by the consent of friends having a fair measure of intelligence; and the insuperable prejudices of ignorant people can sometimes be set aside by using means of preventing decomposition along with the exploration under the plea of embalming the body. It is, at the present stage of the history of abdominal disorders, so important to make autopsies in obscure cases, that I would urge upon the profession accurate record of every symptom in cases of suspected perforation of the vermiform appendage, and in fatal cases all the details of the post-mortem observations.

I had an opportunity recently of making post-mortem examinations in two cases of perforation of the appendix; which were reported in the *Medical and Surgical Reporter*, of February 5 and April 20, 1887. In both of these patients the symptoms indicated trouble in the ileo-cæcal region at an early period, but the location of the pain and tenderness on pressure was not limited in such form as to indicate the origin of the inflammation; and I am forcibly impressed with the difficulties attending any precise diagnosis of perforation of the appendix vermiformis before the disease has progressed so far as to render operative measures of little avail. The double process of cutting down in the iliac region, and subsequently resorting to laparotomy, for the relief of cases attended with general peritonitis, has not been attended with satisfactory results, so that it behooves us, if possible, to go over the whole ground anew to discover some criterion for our guidance in such cases. An occurrence of inflammation in the tissues of the cæcum, constituting typhlitis, from some accumulation within its cavity, may be relieved by evacuating its contents; and thus terminate by resolution; but it is very rare, if ever, that extravasation of fæcal matter in ulceration of the cæcum is not followed by a discharge in one or another direction. It is therefore recognized by those of most practical experience as proper, at an early stage of inflammatory development in the vicinity of the cæcum, to make an exploratory puncture, to ascertain if there be any deep-seated focus of pus; and in the event such source of trouble is detected, a free incision, communicating with the hidden septic seat, is warranted.

It is impracticable to determine the exact source of the suppuration, even when the opening at the bottom of this wound is large enough to admit the index finger for the purpose of exploration; and as a consequence the surgeon cannot decide, generally, whether the lesion is in the cæcum or appendix, when the fæcal odor leads to the unmistakable inference of the escape of the intestinal contents. As a rule, based upon the anatomical relations of the serous investment of these parts, any discharge through a perforation in either enters the peritoneum; and yet, by adhesive inflammation, may be confined to the immediate proximity of its escape, and hence produce a circumscribed abscess there. On the other hand, when perforation of the vermiform appendix occurs, and the contents become diffused to a greater or less extent in the peritoneal cavity, the inflammatory action extends and constitutes general peritonitis with all its serious consequences; or may be partial, from limitation by the surrounding adhesions between different layers of the peritoneum.

We must seek an explanation of the train of disorders following perforation of the appendix in the irritating quality of the discharge from the opening, whether this be caused by the disintegration of tissue from a localized ulceration of the walls, or from the mechanical pressure of some foreign body or concretion within, which cuts its way through the structure into the peritoneum.

There is present in the appendix at all times either fluid or solid fæcal matter, which escapes whenever an outlet exists, and though the quantity may be small at the outset, it gradually increases, so as to permeate in different directions; and being a toxic irritant, it sets up inflammation wherever it comes in contact with the delicate serous membrane, and ultimately induces destruction of its vitality, so that it breaks down in a necrosed state. This brings about the ordinary results of typhlitis, perityphlitis, paratyphlitis or general peritonitis, and the object of the surgeon is to arrest its progress at a point least detrimental to the patient.

The propositions I would submit for consideration are: *first*, the impracticability of making a differential diagnosis between perforation of the walls of the cæcum and those of the appendix; and *second*, that the treatment in its preliminary steps is very similar; so that the operative procedure does not imply a knowledge of which is involved in the given case in advance of its adoption.

The pathological modifications of the tissues in contact with the exudations from either must be identical, on the principle that like causes produce like effects, and the extent of such structural changes depends upon the area involved in the permeation by septic matter. It is a well ascertained fact that the contact of fæcal matter with any of the tissues of the body other than the mucous surface with which it is brought into close relations in passing through the intestines, causes rapid disintegration of structure, and propagates a hurtful influence to all the adjacent tissues, with a general depression of the vital powers. A concise and yet comprehensive paper by Professor Beck, of University College, London, in Heath's "Dictionary of Practical Surgery," gives the characteristics accompanying perforation of the appendix vermiformis so satisfactorily that I will avail myself of it for a general outline of its concomitants.

Perforation of the vermiform appendix is most commonly caused by the presence of a concretion or foreign body within it. According to Dr. Fenwick, who has collected and analyzed 129 published cases, amongst those in which the nature of the obstructing body is recorded 28 were concretions, 14 hardened fæces, and 5 foreign bodies. Amongst the cases in which no concretion was found, tubercular ulceration seems to have been the most common cause of perforation, and a few occurred during or after typhoid fever. Concretions are most common in males under 20 years of age. In my two fatal cases referred to already, one, in a gentleman about 32 years old, resulted from a bean becoming impacted in the appendix immediately below its attachment to the cæcum. The other, in a youth 10 years old, was caused by an oblong pointed fæcal concretion located about the middle of the appendix.

The effects produced by perforation of the vermiform appendix vary with the anatomical relations of the part and the seat of the ulceration. According to Mr. F. Treves the appendix commonly lies behind the end of the ileum and its mesentery, and is directed upwards and towards the left. In the only other common position it ascends vertically behind the cæcum. It may, however, be so placed that its

free end lies at the brim of the pelvis. If perforation takes place near the attached end, or if the whole tube lies behind the cæcum, the abscess would be in the same situation as that resulting from diseases of the cæcum, and would be indistinguishable from it. When the appendix occupies its more common situation, and when the perforation occurs in the free part, it is followed either by general peritonitis, us ually fatal under a week, or by the formation of a collection of pus enclosed in a cavity formed by the surrounding coils of intestines firmly united to each other by adhesions. According to Dr. S. Fenwick in 95 cases of which accurate details could be obtained, 38 presented localized collections of pus.

Premonitory symptoms may be entirely wanting, but occasionally there is a history of obscure pains in the right iliac fossa or of periodic attacks indistinguishable from ordinary typhlitis.

In the cases in which perforation is followed by diffuse peritonitis, there is usually a sudden invasion, often during some violent exertion. The pain commences in the right iliac fossa, but soon extends to the whole abdomen. There is constipation, distension of the abdomen, and absence of evident movement of the intestines. The abdomen is tender, but most markedly in the the right iliac fossa, when some fullness may be felt. The symptoms are much less severe than those of perforation of the stomach or other parts of the intestines, as the extention of the inflammation is less rapid, owing to the absence of the abundant extravastion of the intestinal contents. For the same reason collapse is not marked. Vomiting, often of dark colored matter, is a marked symptom, as in all other forms of peritonitis.

The symptoms of perforation with localized peritonitis are much more obscure. The invasion is usually somewhat sudden. There are localized pain and tenderness in the right iliac fossa. The pain resembles colic in character. There is usually constipation, but it may alternate with diarrhœa. Vomiting is commonly present. After a day or two an irregular, diffused, elastic swelling may be felt in the right iliac region. At this time rigors are not uncommon, with temperature 103° to 104°, accompanying septicæmia. General peritonitis with intense injection of the serous membrane, and adhesions of recent date between the different coils of intestines and the parietes of the abdomen exist. Purulent fluid may be found localized by surrounding adhesions, or diffused in the peritoneal cavity.

In the diffuse form the diagnosis from other forms of perforative peritonitis can only be made by the comparative absence of collapse, by the commencment of the pain in the right iliac fossa, by the tenderness in that region, and by the somewhat gradual extension of the inflammation to the peritoneum generally. The localized form most closely resembles simple typhlitis, and sometimes can hardly be distinguished with certainty. As a rule the swelling is more diffused and more acutely tender at an early period than in simple typhlitis, and the constitutional symptoms are much more marked, (Heath's Dictionary of Practical Surgery). An exploratory operation to discern the source of the disorder, or a post-mortem examination, are the only means of reaching a definite conclusion as to the precise nature of the case, and if we would avoid the latter the former must be resorted to at an early period.

Until recently patients suffering from perforation of the vermiform appendix were practically left to die under the soothing influence of opium, when their end was not hastened by purgatives, enemata, and other violent measures. There is, however, no doubt that whenever perforation takes place the only chance of life lies in opening the abdomen early and freely draining the cavity. This is applicable to those cases in which there is general peritonitis, and still more so to those in which the mischief is localized, whenever a diagnosis can be made.

The incision should as a rule be made above the outer part of Poupart's ligament, and should be about three inches in length. The muscles should be carefully divided and the peritoneum freely opened. The vermiform appendix should then be sought for, and, if it be found and is evidently diseased it may be ligatured with catgut and cut away. If there is diffused peritonitis, with purulent fluid amongst the coils of the intestines, an attempt may be made to clean the cavity by means of sponges squeezed as dry as possible, after being soaked in some antiseptic solution, such as carbolic acid (1 : 40) corrosive sublimate (1 : 500) or tincture of iodine (f℥ij to Oj). If the pus is distinctly localized in a cavity, it is better not to attempt to clean it out, for fear of breaking down the surrounding adhesions. After the operation a large drainage tube should be inserted and the wound closed as far as possible by sutures. The operation should be performed with antiseptic precautions, and some antiseptic dressing be applied.

It may be necessary in some cases to modify the incision. Should the swelling be situated near the middle line, Professor Beck says the abdomen might be opened at the outer border of the rectus muscle, but care must then be taken not to wound the epigastric artery. He erronously claims that the middle line can seldom be a suitable situation for the incision, as, being so far removed from the seat of the disease, the drainage would not be efficient. All who have had practical experience in laparotomy for inflammatory affections will doubtless differ with him in this, as the linea alba is now generally preferred for the incision; and by carrying it to a sufficient extent no difficulty is found in reaching any part, and in effecting drainage satisfactorily. It devolves upon the operator likewise to resort to copious irrigation, with or without antiseptics, to remove all purulent collections from the cavity.

In the debate upon penetrating wounds of the abdomen at St Louis I adverted to a simple process for detecting the presence of fæcal matter or blood in punctured or gun-shot wounds, which is applicable for an explanatory operation in cases of suspected perforation of the vermiform appendix. The report of my remarks will be found on page 596 of THE JOURNAL of November 27, 1886. They may be summarized by stating that the doubt as to existing lesions of the intestinal canal may be resolved usually by passing two tubes through an opening in the ab-

dominal wall at the site of the injury, both being of a length to reach throughout the cavity, with the outer end of one free and open, while the other is joined to a Davidson syringe. The drainage tube should be fenestrated for some inches from the extremity that is within the abdomen, and the other end left entire outside to carry off the fluid injected, with whatever admixture it may contain, whether sanguineous, fæcal, or purulent. A solution of common salt at a temperature of 100° F., may be thrown into the peritoneal cavity continuously, and allowed to pass out by the escape tube, until the water returns free from the abnormal ingredients therein contained. If the outer termination of the syringe be then secured to the fenestrated tube, while the other is removed from the cavity, suction will remove the remaining fluid. I am impressed with the advantages likely to be derived in diagnosticating the conditions resulting from perforation of the vermiform appendix first by aspiration, and subsequently by the process of irrigation here described, as it is evident that a flexible tube may reach accumulations not accessible to the straight or curved metallic tube ordinarily used with an aspirator. The puncture made in aspirating would not suffice for the insertion of a tube, and it would therefore be requisite to make such an incision as to admit a single tube if suction only was indicated, or two tubes if irrigation was intended. This incision should be no larger than necessary, and ought to be made in that part where the supposed exudation or suppuration could be reached most directly. Such a proceeding is called for in the first instance as a means of diagnosis, but may become afterwards an important measure of treatment when a diffused inflammation in the abdominal cavity coexists with local conditions requiring the standard operation by an incision in the iliac regions. Thus the grave complications of following the ordinary procedure in cases of typhilis by abdominal section may be averted, and the prospect of a favorable issue enhanced.

The adoption of prompt and efficient operative measures in the early stages of that inflammation which is set up by perforations of the vermiform appendix depends upon a recognition of the conditions at the outset, and a resort to the exploring needle or the aspirator directly through the tissues involved is warranted by the practical result of those who have had the most satisfactory results in treating this class of cases, as well as in the various modifications of typhlitis. If there is one thing more than another that is pressed upon our attention by the recent developments in abdominal surgery it is that delays are dangerous, and we must take time by the forelock if anything is to be accomplished in snatching from the jaws of death a patient who is suffering from perforation of the vermiform appendix. I am so convinced of the urgent demand for surgical interference at the very earliest practicable period after the occurrence of this accident, that even in a case of simple typhlitis with symptoms causing no misgivings as to perforation, it strikes me forcibly that any cautious surgeon would be authorized in cutting down above Poupart's ligament to verify the true state of the deep seated structures. If no lesion is found in either the cæcum or vermiform appendix, no serious trouble is likely to follow such incision, but on the contrary the drainage effected from the immediate neighborhood of the tissues involved in inflammation must prove beneficial, and the history of early incisions where pus has not been discovered encourages the surgeon to adopt this practice.

Should it appear, on the other hand, that a perforation, however slight, exists either in the cæcum or vermiform appendix, the recourse to Lembert's suture for lesions of the cæcum, and of excision with ligation in perforations of the appendix, afford the best prospect of staying the progress of disorganization. A thorough cleansing of the adjoining tissues by antiseptic washes, avoiding the solutions of bichloride of mercury, is likely to correct the disintegrating process set up by the septic contamination; and by the continuous use of iodoform with the dressings of absorbent cotton, a reasonable calculation may be made of saving the patient. It is not incumbent upon the surgeon to wait for a certainty of perforation—but when a just ground of apprehension exists, he should operate and give his patient the benefit of the doubt.

The practical deductions from this inquiry in regard to the concomitants of perforation of the appendix vermiformis may be included under the following heads:

1. The primary disorder is dependent upon a local irritant, either mechanical, chemical or vital, inducing ulceration and disintegration at some point in its walls.

2. The modification in the tissues of adjacent parts depends upon the presence of a toxic exudation from its cavity, that ultimately leads to disorganization of structure.

3. Extension of the degenerating process depends upon the permeation of the structures with the fæcal matter, but may result from suppuration, or the automatic propagation of inflammation from one part to another.

4. Agglutination between the layers of peritoneum may shut in purulent accumulations, and thus limit the inflammatory action to a circumscribed area, so as to assume the nature of an abscess in that locality.

5. General peritonitis may be accompanied by extensive adhesions of the adjacent serous membranes, and followed by vital prostration and collapse, calling for the knife.

6. Septicæmia may occur from absorption of septic matter independent of suppuration, and associated with a low form of fever which ought to be treated by antiseptics and irrigation of the abdominal cavity by hot water.

7. When there are sufficient indications of perforation in the general symptoms, with pain and tenderness on pressure over the cæcal region, without signs of fluctuation, an exploratory puncture below the ileo-cæcal junction is warranted.

8. If there are any reasonable grounds to believe that pus is present, or that there is extravasation of fæcal matter, whether from the perforation of the

cæcum or appendix, a free incision above Poupart's ligament should be carried down to those parts and drainage kept up afterwards.

9. In perforation of the appendix associated with general peritonitis an incision in the linea alba affords the best prospect of reaching all the parts involved, and should be accompanied by thorough cleansing of the abdominal cavity and especially of the ileo-cæcal region.

10. The most efficient means of closing an opening in the cæcum is by Lembert's suture, while an opening in the appendix demands excision and ligation.

11. When perforation is suspected, washing out the abdomen by the use of a syringe and two tubes will assist in the diagnosis and treatment.

12. An early operation with a doubtful diagnosis of perforation of the appendix lessens the likelihood for a confirmation of it by a necropsy, and hence no time should be lost in awaiting developments.

THE CHIEF SOURCE OF DANGER IN THE USE OF THE UTERINE SOUND.

Read in the Section on Obstetrics and Diseases of Women, at the Thirty-Eighth Annual Meeting of the American Medical Association, June, 1887.

BY GEO. F. FRENCH, A.M., M.D.,

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It is the prevailing opinion of the medical profession that the principal danger to guard against in probing or sounding the uterus is traumatic lesion from incautious handling of the instrument. This is also the teaching, positively or negatively, of nearly all the leading text-books on Gynecology; including those of such eminent authors as Emmet, Thomas, Goodell, Mundé, Hewitt and Courty.

In the third edition of the "Principles and Practice of Gynæcology" Emmet says: "Many a poor woman has endured years of bad health from the carelessness of her physician, in overlooking a latent cellulitis which became rekindled by the unskillful use of the probe or sound." Every student of this great master leaves his book with the impression that lesion from rough or incautious handling of the instrument is the danger chiefly to be borne in mind. Conformably to this view, Dr. E. C. Dudley, in his recent contribution to Pepper's "System of Medicine," conveys at once his own opinion on the subject as well as his impression of Emmet's teaching, that traumatism is *the* danger to be averted, by quoting him as to the dangerous use of the sound "from frequent lighting and relighting of pelvic inflammation *by injudicious slight manipulations.*"

Writing on the same subject, Mundé says: "The dangers attending the introduction of the sound are, the production of uterine colic or actual collapse from shock, a temporary affair, and of inflammatory reaction in the serous or cellular tissue of the pelvis. . . . . The precautions to be observed in using the uterine sound or probe, are chiefly comprised in the two words, *delicacy* and *gentleness.*" In the English edition of Schrœder, which appeared in Ziemssen's "Cyclopædia," he says: "As a rule I consider the sound harmless, provided it is employed by an experienced hand;" but in the last German edition, 1886, he adds: "If there is no abrasion of the mucous membrane *nor infectious matter on the sound.*" In the fourth edition of Graily Hewitt's work on "The Diseases of Women" there is not a word of caution, but the simple statement that "as a general rule, patients experience no inconvenience from the use of the sound if it be carefully introduced."

In the fifth edition of Thomas' classical work, "The Diseases of Women," the author himself expresses no definite opinion on this subject, but quotes Nonat and Scanzoni to show that for some reason sounding the uterus is very hazardous. The former says: "on account of the accidents which sounding may excite, it should only be resorted to with great caution and in those cases where its necessity is clearly shown." The latter, Thomas tells us, candidly acknowledges "that the uterine sound is by no means so harmless as has been asserted."

From Chrobak's contribution to Billroth's "Handbook of Diseases of Women" I extract the following: "Since Broca in 1854 published the first case of death resulting from the introduction of the sound, the number of this class of cases, published, is quite large: still larger the number where a slight or severe sickness (without fatal result) followed."

Now, when we consider the remarkable tolerance of the uterus of such surgical procedures as curetting, divulsing, not to mention accidental perforation, it appears to me that some more obvious cause must be found to account for the apprehensions expressed by the authors just quoted. This prolific source of danger, comparatively unrecognized, lies I believe in septic matter conveyed into the uterine cavity by the non-disinfected sound. When we study the histological nature of the uterine cavity the danger becomes apparent. We can all remember when traumatism was the bugbear which deterred us from entering the peritoneal cavity; and when, every now and then, a healthy patient succumbed to cystitis, (as the death certificate read) after merely being catheterized, we regarded it as due to traumatic shock. But we have learned better. I can myself recall many cases of grave cellulitis and peritonitis during the past twenty years, which, explained by traumatism, were unaccountably mysterious; but as due to septic infection, are painfully easy to comprehend. Some surgeons like Mundé and Tait are so absolutely clean in their method of performing surgical work, no septic results occur, though apparently they ignore this principal source of danger and are conscious of guarding against traumatic lesion only. Thus Mundé sounded the uterus five thousand times without a single catastrophe: which only proves to my mind that Mundé practices better than he preaches. A criticism equally true of the Pyo-Salpingist of Birmingham.

I would by no means detract one iota from the importance of delicate manipulation in exploring the the uterine cavity, but I maintain that the danger from traumatic lesion is completely overshadowed by

that from septic infection. The enunciation by Nœggerath, in 1872, of the doctrine of latent gonorrhœa as a potent cause of pyo-salpinx is but just now fully recognized, and instead of regarding Nœggerath's discovery as an isolated and exceptional fact, I believe it is one of a large group of facts illustrating a general principle.

LeBec has investigated the course of the lymphatics of the upper portion of the vagina and cervix, and allege that they pass below and outside the base of the broad ligament to the obturator glands which communicates with the inguinal glands. In the cervix the lymphatics of the mucous membrane are connected with the saccular sinuses extending near the epithelium of the inner surface of the mucous membrane (Lindgren). In the muscular layer we have lymph-vessels and lymph-spaces; the lymph-vessels are most abundant in the external muscular layer and are connected with the lymph-vessels of the mucous and serous layers and run into large valved canals at the side of the uterus. Thus the lymph passes from the mucous membrane lymph spaces into the vessels and spaces of the muscular bundles up to the serous coat, and then passes into large tubes in the broad ligament. Leopold considers the uterine mucous membrane as a lymphatic gland or lymphatic surface, intersected with glands and blood vessels, the lymphatics being not mere vessels but spaces between the connective tissue bundles.

To the author of these anatomical researches, D. Berry Hart, the collaborator of a clever work on Gynæcology, which he modestly styles a manual, belongs the distinction of being the first among English-speaking writers to systematically call the attention of the profession to this still unappreciated danger. We have, then, to look to Edinburgh for an advanced view like the following: "The great dangers to the patient from the passage of the uterine sound, are abortion and abrasion of the mucous membrane, *with absorption of septic matter* and resulting cellulitis or peritonitis." Two cases of this nature are reported by Sänger, of Leipzic.

It is manifest that a gonorrhœal pyo-salpinx might be communicated as readily by an infected sound as by the extension of the disease from the vagina. So too, a septic pyo-salpinx, non-gonorrhœal, whether derived from the virus of erysipelas, pyæmia, diphtheria or scarlet fever, may be carelessly transferred from the gynecologist's hand or sound, and give rise to a pelvic peritonitis with more or less systemic infection, such as has never been observed as the result of a gonorrhœal infection which is believed to limit itself to the mucous membrane. Among the German authors Fritsch has done signal service to emphasize these dangers, and forcibly says: "Always before introducing the uterine sound, dip it into a five per cent. solution of carbolic acid, even though properly cleansed directly after its previous use."

Although these words belong to the New Testament of medical belief, and were uttered several years ago, the momentous truth inculcated is as slow of recognition and general acceptance as were the oracles of the inspired Semmelweis.

DISCUSSION.

Dr. A. Reeves Jackson, of Chicago: I appreciate the invitation to address the Section upon this subject, but I find myself utterly unable to do so owing to the fact that I am just recovering from an attack of laryngitis. I have been extremely interested in the paper and fully endorse the views given therein. I think there is one source of danger in the use of the intra-uterine sound that has not been mentioned; the attempt to make use of it as a placer in cases of displacement of the uterus. I know from my own experience, when I was still more inexpert than I am now, that I attempted to do more with the sound than I would now do. What I can now do better with my fingers I then attempted to do with the instrument. I believe the author is right in attributing the source of danger to septicæmia in the way he has described. The paper is a very excellent one, and is likely to lead to the best results.

Dr. E. W. Cushing, of Boston: I think the thanks of the Section are due to Dr. French for bringing up this important subject. There is one particular which he did not dwell upon; that is that it is not merely the sound which carries the infection from some previous case, but that the vagina in itself is a hot-bed for various kinds of bacterial growth. Any one who will examine the discharge of the secretions of the uterus will find various kinds of bacteria and there is no doubt but that these bacteria will cause septic inflammation. It seems to me that the sound is very apt to be innocent if reasonably well taken care of, but where great care is necessary is not only in disinfecting the sound but the vagina and the neck and mouth of the womb before the sound is introduced. In hospital and private practice I invariably thoroughly irrigate the vagina with a bichloride solution; afterwards I cleanse off the mouth of the womb and then with a probe and carbolic acid cleanse out the cervical cavity before passing the sound into the womb. With this precaution I have never had any trouble, and I do not think there is likely to be any except in cases of salpingitis, where the inflammatory action is already there or carried from the vagina into the womb.

Dr. C. R. Reed, of Middleport, Ohio: No doubt it is true as stated that the vagina is a hot bed for the transmission of bacteria. Then what is to hinder the bacteria at any time from traveling up the cervix through the Fallopian tubes and reaching the peritoneal cavity; they are so small that there would be no trouble in doing this. When I use the sound I invariably use it through a speculum, so that it does not come in contact with the vaginal walls. The paper of Dr. French was a very able one, and one that teaches a practical lesson. If the sound is dipped into very hot water or an antiseptic solution as suggested, I think it may just as readily be passed now as when Sims brought it into use forty years ago. I have used it thousands of times, and I do not recall any instance in which I thought any inflammatory action followed the operation; but I take the precaution of invariably using it with the speculum or disinfectant.

Dr. W. W. Potter, of Buffalo, N. Y.: I do not

wish to take up the time of the Section on this subject, but it is fair that I should express my appreciation of the paper of Dr. French, because it follows out in a special way a line which I undertook to mark out in a more general way in this Section last year. If we examine the literature of gynecology, both that which has been so easily cited from the text-books by the author, and also the journalistic literature, we can but be impressed with the fact that there is a growing caution with reference to the use of this instrument, and it is a pretty general conclusion that observers have reached that it has done and is doing considerable hurt. Whether it does it in one way or another may not be absolutely possible for us to determine. But I have no doubt the author wishes to impress upon us that this is one, and perhaps the chief way in which the sound itself does harm. Dr. Cushing has mentioned the fact that the vagina is more or less loaded with bacteria or other germs which may be carried up by the passing of the sound through that tract even when the sound itself has been perfectly purified or sterilized before using. I think there is something in that, and as these gentlemen have asked that the sound be rendered thoroughly antiseptic before useing, let us also render the vagina so; let us precede the examination and treatment of the case by a thorough washing out of that cavity with an antiseptic solution.

DR. FRENCH said, in closing the discussion: You will note that the subject of my paper was "The Chief Danger in the Use of the Uterine Sound." I tried to show that there is an alarming degree of danger which comes from the use of the sound, in some mysterious way. I showed by records that injuries to the uterus by divulsing, etc., do not explain it. I brought this subject before you because I think it is of importance, and no American text-book touches upon it, yet I can show that it is a most prolific source of danger. Gentlemen have said that the bacteria incident to the vagina are the prolific and almost as great a source of danger as that spoken of. I demur, and for this reason: We have demonstrated the fact that gonorrhœa produces pyosalpinx; we have also demonstrated the fact that there is a septic variety entirely distinct from this depending upon pyæmia, scarlet fever, etc. In regard to the bacteria which exist in the vagina normally, it is a hypothetical view to take of the subject and the point is not proven, and while it remains a hypothetical question we have no right to consider it with the question of chief dangers in the use of the uterine sound.

CLONIC RYTHMICAL SPASM OF THE PRONATOR RADII TERES.

Read in the Section on Practice of Medicine, Materia Medica and Therapeutics, at the Thirty-Eighth Annual Meeting of the American Medical Association.

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"There are few topics of more utility for the physician to study, in our opinion, than that of monoplegias and mono-spasms of hemiplegias and hemispasms in their genesis, mutual relations, and diagnostic significance," says Seguin in his article on the general semeiology of nervous diseases, in the fifth volume of Pepper's "System of Medicine." A superficial examination of our standard text-books, will show the paucity of information regarding hyperkinesis, except in so far as the symptom relates to the diagnosis of paralysis agitans, chorea or sclerosis. A myoclonus limited to a single muscle, is not uncommon, and is usually observed in the ciliary, orbicularis palpebrarum, and masseter muscles. The sterno-cleido-mastoid may also be affected with a clonic spasm, giving rise to one of the most painful forms of wry neck. A case such as is here detailed of a clonic, rythmical spasm of a single muscle lasting nearly eight months without paralysis, contracture or atrophy has not until the present come under my observation; nor have I seen such described in any of the literature accessible to me.

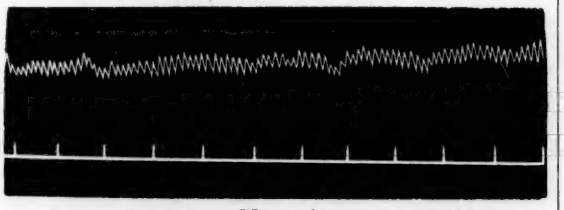
The history of the case is as follows:

S. C., school girl, age 17 years, of a healthy family, free from all hereditary neuroses. Father and mother living and well; one brother died in infancy of some acute affection. Patient is a slender but by no means delicate girl. Began menstruating at the age of fifteen, and has never had any uterine or ovarian disturbance. Gives no history of hysterical or "nervous" attacks. Six months before present attack was troubled with an affection called, "gastric fever," by her physician; this was followed by some headache which was aggravated by anxiety over school examinations held at this time.

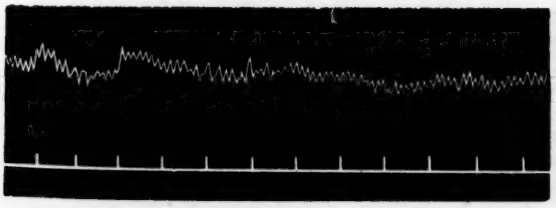
In October 1886, while sitting quietly at her desk in school, she suddenly felt her right arm jerking; she could not stop the spasm by any voluntary effort. It continued the remainder of the day and the entire night. The following afternoon, twenty-four hours after the attack began, she presented herself at the clinic for nervous and mental diseases in Rush Medical College. The pronator radii teres was found to be contracting rythmically about 120 times per minute. Each contraction of the muscle pronated the hand, which as the muscle relaxed, immediately returned to a position a little short of midway between pronation and supination, when the next contraction again pronated the hand. The movement exactly resembled voluntary pronation when performed as rapidly as possible. If the hand was strongly supinated and held firmly considerable pain was felt in the muscle. When the forearm was allowed to assume a natural position, no pain was felt; indeed the patient during the early part of the trouble never complained of any discomfort except a slight nervousness, due as she said, to the constant motion of the arm. The muscle feels tense and cord-like under the skin, but does not seem swollen. No redness or any evidence of inflammatory reaction. An effort was made to overcome the contractions by pressure on the median nerve, constricting the arm with a band, and fixing it firmly. These measures did not diminish or prevent the spasm in the slightest degree. Electricity

in the form of constant current was recommended. She was treated for the next four months by her family physician with an ordinary interrupted current from a revolving dynamo machine; each application was attended with considerable pain. For a month the contractions continued without intermission, sleeping or waking, and seemed to grow stronger. The arm began to feel tired and weak. About the first of December the contractions would cease for a minute or two several times each day. At this time she began to feel pain about the elbow and along the inner edge of the biceps extending as high as the top of the shoulder, and the muscle itself was tender to the slightest touch.

March 3, she presented herself at my office for treatment. At this time the contractions were more rapid but the movements of the hand were less extensive. Intense pain was felt along the median and musculo-spiral nerves, with considerable pain over the shoulder on both superficial and deep pressure. The constant current of from six to eighteen cells was applied over the muscle and along the nerves for about fifteen minutes daily. The current was alternated using first an ascending and then a descending current, but care was taken to avoid interrupting. Under this treatment improvement was rapid, the spasm became less marked, finer, and the intervals of rest longer and more frequent. The pain which I regard as due to a peripheral neuritis entirely subsided. In May the contractions were reduced to mere tremor, not unlike that seen in paralysis agitans, but on closer examination it is seen to be due to the successive and rapid contractions of the pronator. A tracing taken over the muscle at this time showed about 400 to 420 distinct contractions a minute.



No. 1.



No. 2.

Read from left to right. The upper line in each tracing records the number of contractions, while the lower one represents the rate at which the drum was revolving in seconds of time. No. 1 shows the contractions as nearly equal in number and extent, and is typical of the larger number taken. No. 2 illustrates the effect of slight involuntary inhibition of the muscle; the wider excursions of the pen, and the wavy outline of the whole tracing, represent slight movements on the part of the patient.

From this time improvement continued, the intervals of rest became longer and more frequent, and during sleep the spasm ceased. At present the tremor is so slight as to scarcely attract the attention of the patient. She says that it probably ceases much longer than she is conscious of, for her attention is not called to the hand for hours at a time.

This condition has never been associated with any incoördination of the other muscles of the arm. Writing was accomplished without much difficulty, but caused great fatigue owing to the effort of the other muscles to overcome the action of the pronator. The longer strokes were often wavy not unlike the appearance in beginning sclerosis. During the course of the difficulty no other symptoms of nervous disturbance were present though they were carefully looked for. Sleep was good except during the early part of the trouble when the movements were considerable. The general health was not impaired. No internal medicine was given excepting full doses of arsenic for about three weeks, which did not seem to influence the course of the disease.

DISCUSSION.

Dr. Frank Woodbury, of Pennsylvania, had had a patient, a girl, who had a clonic muscular contraction for two months. It may have been hysterical. There may have been malnutrition and defective innervation in the case under consideration.

Dr. H. Duncan Bulkley, of New York, asked how much arsenic Dr. Moyer gave.

Dr. Moyer said that he gave gtt. iij three times a day, and increased to gtt. ix at the end of a week. He rarely gave arsenic oftener than thrice daily, and that after meals. In the case reported he saw no symptoms of uræmic poisoning or of gastric disturbance. He has seen a chorea confined to a group of muscles or to the hand, but such contraction as in the case mentioned was never seen in chorea. The pathological changes in the case may have been in the muscles, but he did not think so. Except in chorea, paralysis agitans and sclerosis the pathology of muscular spasm is not well understood.

DIPHTHERIA AND TRACHEOTOMY.

Read before the Medical Society of the District of Columbia, April 13, 1887.

BY LACHLAN TYLER, M.D.,

OF WASHINGTON, D. C.

As commom and fatal as this disease is, the profession is still more or less at variance regarding a discriminating definition of diphtheria. In the opinion of many it is a malady separate and distinct from that other, so closely allied to it and termed pseudo-membranous croup; while on the part of others the belief is that the two diseases are really identical.

It is partly with the hope of eliciting from the members of this society an expression of opinion concerning the questions of unity and duality that this brief communication is presented. Only by free and full discussion, if necessary oft repeated, can a matter in such great dispute ever be brought to final settlement. If there be but one disease—diphtheria—that fact had better be plainly and decisively con-

ceded, and the mind thenceforth disabused of any further idea to the contrary.

It is not a difficult task to appreciate the harm which might be perpetrated by a confusion of ideas consequent upon a false conception of the illness to be treated. Under such circumstances the sthenic condition attributed to so-called membranous croup would be sufficient to restrain the hand in the beginning from administering appropriate remedies in anticipation of the treacherous onset of the asthenia of diphtheria, which, as subsequent events would show, had all along been in existence. According to my own judgment, no distinction can be safely drawn in practice between the two diseases, and as a rule there is no good reason for making any. Even in the minds of those who cling to the opposite belief a doubt is harbored, in the greater number of cases, as to which is presented, and the precaution is nearly always very wisely taken to provide against the possibility of its being diphtheria. No comment is necessary upon making this simple statement.

The effort to exact a pathology for each, which in essential particulars should possess a sufficient number of points of difference to distinguish them, has had no good results, and, indeed, can be said to have practically ended in failure. The etiological factors, also, traceable in the history of the two affections, have not been shown to be dissimilar with any pronounced exactness.

The greatest mistakes have ever and again occurred by relying upon the peculiarities of the membranous deposit for distinctive evidence of the existence of one or the other disease. The simple truth would seem to be that it varies in character according to the severity and degree of penetration of the inflammatory process. How far and in what manner this process is influenced by the constitutional state of the patient is not always clearly indicated. The local effects are sometimes as severe in those with little bodily vigor as in the more robust, leaving whatever may be the amount of inflammation to be principally ascribed to the localization of the specific cause of the disease.

In fatal cases of pseudo-membranous croup it is maintained that death is primarily the result of asphyxia, due to membranous stenosis of the larynx; while in diphtheria the idea obtains that it is more in consequence of a septicæmia or toxæmia, ultimately producing paralysis of the vital forces.

It is within the experience, however, of almost every practitioner to have seen cases of the former develop into well recognized diphtheria, and terminate accordingly; and of the latter disease, commencing in the most typical manner in the fauces, pass downwards and become complicated with croup. On account of these facts it cannot but be admitted, therefore, that the two diseases are, at any rate, interchangable; and it would be going only a step further to believe that primary diphtheritic laryngitis might occur as well as diphtheritic faucitis or pharyngitis.

If the two diseases are the same, the difference in contagiousness between them has been explained by their respective situations; and that in temperature in like manner. In other words, if the larynx alone is attacked the infectious principle is situated at a safer distance than when located in the pharynx; and, according to observation, the temperature is likewise increased when the disease occurs at that point. Glandular enlargements accompany membranous croup as well as diphtheria, and in each are dependent upon the degree of inflammatory action which may be going on. They have been noticeably absent in some of the cases I have attended.

The same sequelæ, including paralysis, are witnessed after either affection; the plain truth being that fewer cases of diphtheritic laryngitis survive, and they are, therefore, seen oftener when the diphtheritic process has remained confined to the pharynx.

All pseudo-membranous sore throats, occurring idiopathically, should for safety's sake, if for no other reason, be set down and treated as though they were diphtheria. Those resulting from traumatic causes should of course have a different significance attached to them, and receive attention in accordance therewith.

I consider it necessary to mention the name of only one man who may very properly be placed as authority at the head of those believing diphtheria and croup to be identical, viz: Jacobi. "In fact everything that has been written," says Dr. Joseph E. Winters, of New York, "by those who have contended that membranous croup is an independent disease, distinct from diphtheria, is nearly a compromise, and does not give one tenable diagnostic characteristic between them." To this I will add that there may be certain *library* differences between the two diseases, but none of clinical value.

The question as to whether diphtheria is primarily a local or a constitutional disease still remains a mooted one. That it is a local disease with a constitutional expression is, in my opinion, the correct conclusion, but the fact that it is opposed by many whose prominence in the profession entitles them to be heard with respect, and merits for their views the most deferential consideration, should prevent any one from assuming an attitude at all dogmatic in the premises. Besides a considerable number of others, Oertel may be cited as advocating the theory that diphtheria commences in the throat, and that subsequently the whole system becomes infected by septic absorption through the lymphatic channels.

All parties, however, occupy neutral ground in dealing practically with the subject, for from either standpoint, in order to gain any advantage over the disease, the treatment, so far at all generally approved, when carried out in full is always the same in principle and effect.

In regard to treatment it is well to say that too much emphasis cannot be employed in condemning the idea that there is a specific remedy for diphtheria in the possession of anyone. It is a threadbare argument that if such a remedy existed the great multitude advised and employed would not have been forthcoming, nor undergo such frequent additions. In computing results from the various drugs administered for the cure of diphtheria nothing much more favorable to one than to another of them can

be discovered; and without being too sceptical, the belief might well be entertained that at times recovery from the disease was in the main dependent upon the mildness of its course and the persistency with which watchful care was observed.

The statistics of Dr. N. Lunin, of St. Petersburg, published in 1885 (*Medical Record*, vol. 28, No. 3), afford a fair idea of the utility of certain fashionable remedies. Two hundred and ninety-six cases were treated in the Children's Hospital of the Princess of Oldenburg. All the children, with the exception of twenty-five, are represented as having been well developed and well nourished. The list of remedies used was composed of corrosive sublimate, iron, chinolin, resorcin, bromine and turpentine. In the "phlegmonous-septic" form of the disease, according to his classification, iron proved superior to any of the others, the deaths under its administration, however, reaching 76.5 per cent. In the "fibrinous" form the oil of turpentine gave the best results, only 8.3 per cent. of the cases treated with it dying.

The treatment by iron and chlorate of potassium internally seems to have become the one quite generally agreed upon as being the most satisfactory. The practice of administering iron, however, in such enormous doses to young children as 3j, or more, frequently repeated, finds, and I think rightly so, little favor with the profession at large.

The effort to use the spray too frequently and in spite of any violent resistance on the part of the child, is, in my judgment, an unjustifiable and hurtful procedure, in view of the additional amount of exhaustion it is likely to produce. If its use, however, can be accomplished without unduly exciting the little patient to opposition, no question can be raised concerning the benefit it is capable of conferring.

The insufflation of sulphur and other powders has at various times been highly recommended, but I have never witnessed any remarkably good results from it.

Inunction with the oleate of mercury—a method of treatment, by the way, strongly advocated before this Society several years ago—has in my hands failed to produce the good which was to be expected.

Remembering the asthenic tendency of the disease, it can only be in exceptional cases, and when our one desire is to lessen and render easier of expulsion a very thick and tenacious membrane, that such a depressant as pilocarpine can be given with any degree of safety or propriety. Its use for eliminative purposes, in reference to the *materies morbi* of the disease, might far better be discontinued, as it is undoubtedly too dangerous a medicine with which to make such experimental tests. It is safer to rely upon ipecac, zinc, turpeth mineral, or some other emetic whose effects, though practically the same so far as dislodging the membrane goes, are, comparatively speaking, less permanent in duration, and could, at any rate, more certainly be counteracted, should the occasion arise, by stimulants given with timely precaution.

The carbonate of ammonium, given alone in full and frequent doses from the outset, and, if subsequently required, in conjunction with whisky, is a remedy in which, I am convinced, too much faith cannot be placed. Not only as a diffusible stimulant is it exceedingly valuable, but as a solvent of the diphtheritic membrane also, in which capacity it possibly excels all others by the mode of its action through the circulation.

Quinine deserves especial recommendation. Given in tonic doses—preferably in the form of the oleate to the very young, by inunction—it seems to be potential in exercising a favorable influence in what might be termed its own peculiar way, and imparts to the physician a certain feeling of security and satisfaction difficult to define.

Steaming, hot poultices, rubefacients—of which turpentine and camphor liniment are probably the best examples—and opiates to quiet restlessness and procure sleep whenever necessary, complete the catalogue of remedies of which I deem it worth while to speak.

An ample supply of concentrated nourishment is always of prime importance; but here, at least, I do not believe in what is called forced alimentation. Diphtheria becoming an acute wasting disease, must necessarily be accompanied by greater or less functional enfeeblement on the part of the digestive organs, which to be overtasked under such circumstances would only lead to complications of a character most certain to aggravate the preëxisting low condition of the patient.

Before leaving this part of the subject, I wish to say that any conflict of judgment arising between physicians in attendance upon any case of diphtheria—each with a hobby of his own concerning the most appropriate treatment to be adopted—is, in the present state of things, entirely uncalled for; since, as has been mentioned, there is no specific for the disease and, after all, there is very little difference in the results, it matters not what particular method of treatment is practiced. The principal aim should be to prosecute any recognized mode of treatment which happens to be selected in a thorough and systematic manner, and without any vacillation, to the end.

The operation of tracheotomy for the relief of the symptoms of diphtheritic laryngitis, while certainly not a difficult one to perform if ordinary care be exercised, remains in a more unsettled state than almost any other in surgery in reference to the exact time when it should be resorted to, and the extent to which benefit is conferred by it. With the fact confronting us that many desperate cases recover under simple medicinal treatment, it cannot be successfully disputed that after the operation just as good grounds often exist for believing that recovery took place in spite of it, as that it was the means of saving the patient from what would have been otherwise inevitable death.

The difficulty of deciding at the bedside upon the appropriate moment for the operation can only be overcome by authoritatively establishing it as the necessary practice immediately upon the occurrence of invasion of the larynx by the local process, as shown by the altered tones of the voice, and by the slightest interference with respiration.

Ranke, of Munich, in a paper read at the fifty-eighth Congress of German Naturalists and Physicians, Strasburg, September, 1885 (*Medical Record*, vol. xxviii, No. 25), reported that upon the appearance of these symptoms he had operated the preceding seven and one-half years in 45 cases with 19 fatal results, the number of recoveries therefore amounting to 57.8 per cent. This is a higher percentage than is ordinarily attained when the operation is performed at irregular times, or principally for the relief of the most urgent symptoms of suffocation, and may be accepted as fairly illustrating all the advantages to be gained at the present time from the plan of operating so early.

Were it not for the constitutional state engendered by the disease, the death-rate from it would no doubt be reduced to the smallest proportions by the opportune performance of tracheotomy. But even as it is, with the organism thoroughly impregnated with the poison of the disease, and in consequence engaging to a large extent in the production of the dyspnœa, it is nevertheless oftentimes instrumental in relieving so much of it as may be dependent upon the local causes which more directly tend to precipitate a fatal issue.

A concensus of opinion is being very generally formed in favor of what may be called the *precautionary* performance of tracheotomy. But in any instance in which, for good and substantial reasons, the operation is delayed, it should not follow that it must be entirely disapproved of, even as a *dernier ressort*. The fact is, it may be appropriate at any period of the disease, but more particular when the *first* evidence of laryngeal distress is recognized. It does not appear to be the only, nor, it might be said, been the principal effect of the operation, to admit of a supply of oxygen to the blood, because, in satisfying any demand for that elementary principle by other than surgical means, similar good results do not so positviely occur. I have had practical experience of this. Aside from anything else, it no doubt also affords relief from certain nervous impressions causing many of the distressing phases of instinctive action.

Without having had any experience with either intubation or deep tubing of the larynx, a substitute recently offered for it, I am inclined to think, after perusing the literature bearing thereupon, that as compared with tracheotomy they offer a more scientific and rational method of dealing with the majority of cases of diphtheritic laryngeal stenosis. The double advantage they possess of being most effective in the later stages of the disease, and of presenting no obstacle to the performance of tracheotomy at any time, not to speak of the fact that they are calculated oftentimes to obviate the painful necessity of shocking the feelings of family and friends, or to at least establish euthanasia, would appear to be sufficient to commend them above and beyond tracheotomy in almost every instance. How far they may hereafter succeed in revolutionizing that part of the treatment of diphtheria to which they are adapted cannot be foretold.

The main objection offered to them, of disturbing the invalid to an unreasonable degree, and especially of subjecting him to the dangers of the upright position during the time occupied in introducing the tube, are not, I think, comparable in seriousness to those which can be advanced in respect to the measures resorted to in performing the operation of tracheotomy.

MEDICAL PROGRESS.

MODIFIED LARYNGECTOMY.—DR. J. SOLIS-COHEN describes the following operation:

1. Make an incision in the hyoid bone to the lower border of the cricoid cartilage, and exactly in the middle line.

2. Carefully separate the sterno-hyoid muscles.

3. Hold the soft parts aside and insert, from above, one blade of a strong cutting forceps with narrow blades beneath one wing of the thyroid cartilage, one-fourth of an inch from the angle of junction with its fellow, and sever the cartilage vertically its entire length through to the crico-thyroid membrane.

4. Make a similar cut on the opposite side.

5. Seize the freed angular portion of the thyroid cartilage, comprising its entire respiratory contingent, with a volsellum forceps, and draw it to either side, the soft parts being separated meanwhile from the inner surface of the detached wings of the thyroid cartilages with the handle of the scalpel.

6. Make a transverse cut to sever the cricoid cartilage from the trachea. (At this step, in the living subject, a sterilized cotton plug should be inserted into the upper end of the trachea, preliminary tracheotomy having been performed previously.) (If the cricoid cartilage is to be retained, disarticulate the arytenoids, and then sever the soft parts above the cricoid instead of below. This modifies the next step in the procedure accordingly.)

7. Lift the cricoid cartilage forward and carefully separate it with the edge of the knife from the inferior edge of the cornua, laterally and superiorly, and then from the œsophagus posteriorly.

8. Insert a finger into the pharynx from below and carry its tip over the epiglottis to draw that structure down.

9. Divide the thyrohyoid membrane and the fibrous tissue still holding.

10. Lift out the exsected respiratory portion of the larynx.

The arteries likely to require ligation will comprise small branches of the superior, middle, and inferior laryngeals.

Upon the living subject the operation should be strictly aseptic, and where practicable should have been preceded by several days by a preliminary tracheotomy. The trachea may be occluded superiorly by a small rubber bag attached to the smallest-sized soft catheter, introduced through the tracheal wound, above the canula, and then inflated. The canula may be temporarily removed during the introduction of the bag and its inflation.

Advantages alleged for this procedure:

1. Its rapidity, ease, and comparative safety to the patient.

2. The small size of the wound.

3. The preservation of the attachments of the thyrohyoid ligament and of the greater part of the membrane, and of the thyrohyoid, sternohyoid, stylopharyngeus, and inferior constrictor muscles; leaving—

4. Important functional structures retained in their normal relations for deglution; and leaving—

5. A firm, natural support for the adjustment of artificial substitutes for the larynx.

For these reasons it is submitted that this procedure should be preferred to complete laryngectomy whenever not precluded by extent of disease.—*N. Y. Medical Journal*, June 18, 1887.

CONVALLARIN AND CONVALLAMARIN.—DR. J. N. NATHANSON has made a theoretical and practical inquiry into the action of these glucosides. Having reviewed the literature of the may-lily, he found that, as far as four chief preparations were concerned (viz., the infusion of the flowers, aqueous extract of the whole plant, tincture of the flowers, and American fluid extract), the opinions of various authors were by no means so contradictory and so doubtful as Langgaard had thought. But—curiously enough—it proved otherwise in regard to the may-lily glucosides, the active principles of the plant, convallarin and convallamarin (discovered by Walz in 1858), Marmé, who had experimented on both of them in 1867, found that convallarin was endowed solely with a purgative action, while convallamarin acted mainly on the cardiac muscle, being a "cardiac poison." Dr. Isaïeff (1881) confirmed Marmé's statement on the latter substance, without touching the former. But Dr. Leubuscher (who apparently had worked with Tromsdorf's preparation) flatly denied any action of convallamarin, while Professor Maragliano and, later, Dr. Bochefontaine declared that both of the may-lily glucosides possessed an identical action on the heart, the only difference being that convallamarin acts stronger than convallarin. The first step made by Dr. Nathanson, in view of this rather remarkable conflict in the statements concerning the "chemically pure active principles" of the plant, was to have the commercial glucosides analysed; a second, to undertake a series of therapeutic experiments at Professor Koshlakoff's clinic. The first preparation of convallamarin obtained by him from Merck (in 1885) proved to be a mixture of that glucoside with convallarin and some products of decomposition of both, as an analysis by Professor A. A. Loesch had established. The explanation of discrepancies between different observers was then pretty near. Of course, no experiments were made with that preparation, and the purest glucosides were obtained from Merck to be given in four cases of disturbed compensation (in a patient, aged 15, with aortic regurgitation and relative mitral insufficiency; in two patients, aged 57 and 40, with aortic regurgitation alone; and in a patient, aged 48, with mitral regurgitation and stenosis). The results were these:

1. Convallarin (given in the dose of from 0.06 to 0.12, three or four times daily for three to eight successive days) produced only nausea, diarrhœa, and gastric pain. The pulse, breathing, daily amount of urine and dropsy either remained unchanged or showed unfavorable alterations.

2. Convallamarin was administered in the daily (gradually increasing) dose varying from 0.03 to 0.3 gramme for eleven to seventeen successive days. In one of the patients, to whom digitalis, scilla, caffeine, and adonis had been previouly given and failed, convallamarin also remained, on the whole, inactive, the improvement consisting only in a slight decrease of dyspnœa and palpitation after exercise. But in the remaining three patients a rapid and striking improvement ensued; the pulse became slower and more regular, the amount of urine augmented, dropsy decreased, and all other signs of disturbed cardiac compensation gradually and steadily disappeared.

3. Of accessory effects, only slight nausea, salivation, and giddiness were observed in one of the patients when the daily dose had been increased to 3 decigrammes; in another, slight nausea and vomiting made their appearance, when the daily dose had been raised to 0.35 and 0.4 gramme.

4. No cumulative action was ever observed. The general conclusion of Dr. Nathanson is to the effect that convallarin possesses but a purgative action, while convallamarin represents a useful cardiac drug endowed with the power of re-establishing disturbed compensation, and free of any unpleasant accessory effects. Selection of an absolutely pure preparation is a matter of paramount importance.—*The London Medical Record*, July 15, 1887.

METHYLAL.—Methylal is a fluid of specific gravity 0.855; its vapor density is 38°, taking hydrogen as a unit, and a boiling-point of 42° Cent., 107.6° Fahr. Its solubility in blood is one part in three; its composition is $C_3H_8O_2$. It is made by distilling methylic alcohol with sulphuric acid in the presence of peroxide of manganese, but it requires several redistillations before it can be obtained in the pure state, for which reason it is at present a very expensive compound. When methylal is quite pure it is almost tasteless, but bites the tongue, and, owing to its low boiling-point, quickly evaporates. The odor of it is fragrant, and not very powerful. The pure vapor creates no irritation on being breathed. After long exposure to the vapor of methylal, in an atmosphere containing not less than thirty-five per cent. of the vapor, warm-blooded animals may be made to pass into a sleep which, once established, is deep and prolonged.

Methylal was first introduced by Dr. B. W. Richardson, who in his early researches supposed that he had found that it was a marked narcotic, but he now states that he believes that the narcotism so produced was due to the presence of acetone from the methylal not having been sufficiently pure. Recently, with a perfectly pure specimen, he endeavored to anæsthetize two dogs with methylal in order to enable them to be operated on painlessly. After half an hour's inhalation of the vapor narcotism was not produced. The fluid was then injected hypo-

dermically in one animal and to the extent of an ounce dose, upon which a gentle sleep, or rather intoxication, followed, but with no sufficient anæsthesia to allow painless operating. In action as a medicine, methylal lies between alcohol and anhydrous ether. It quickens the action of the heart with reduction of arterial pressure; it makes the respirations slow and deep; it induces a tendency to sleep; and it is a sedative to pain, but not to a very deep degree. On the whole, it would be best to keep it in the group of anodyne antispasmodics, in which Dr. Richardson originally put it. It causes very little muscular excitement and no vomiting, but after long inhalation of its vapor it produces a free flow of saliva. As it mixes well with alcohol and with ether it might be administered with either of these agents, and it might also be given with amyl nitrite for the relief of colic, asthma, angina pectoris, or tetanus; but before it can come into general use it must be reduced in price.

Methylal is very soluble in water, and may be administered by the mouth when diluted with water, or by hypodermic injection. Dr. Richardson recommends commencing with a dose of a fluid drachm, mixed either with glycerin or syrup of orange-flowers and distilled water.—*Therapeutic Gaz.*, April 15, 1887.

ANTIFEBRIN AS AN ANODYNE IN SPINAL SYPHILIS.—DR. HENRY M. FISHER reports (*Medical News*, July 23, 1887) a case of spinal syphilis in which severe pains yielded to five grain doses of antifebrin. "The pains were due, I believe, to gummatous infiltration of the posterior columns of the spinal cord. The patient contracted syphilis twenty-two years ago, and when I first saw him, ten years after the primary lesion, he complained of severe intercostal pains; so, even at that time, it is probable that there had been some infiltration of the spinal cord. A few months later *right* optic atrophy occurred, and hearing in the *left* ear became much impaired. At about this time paralysis of the facial muscles and hemianæsthesia of the tongue occurred. In 1880 he had a fall on his head, and, a little while later, was found to be suffering with mental aberration and was treated for some months at the Insane Department of the Philadelphia Hospital, and later, at the Norristown Asylum. In 1881 there was marked paresis of the left leg, and severe intercostal and girdle pains were complained of. Under specific treatment, the pains diminished in severity, but, since another attack of the left hemiplegia last autumn, they seem to have occurred more frequently and with greater severity. They were described as sharp, cutting pains, and extended from the upper intercostal spaces to the sacrum and also along the course of both sciatic nerves, more particularly the left. There has been, at no time, any paralysis of the bladder.

On June 22, having administered several quarter-grain doses of morphia with the effect of giving him only temporary relief, I ordered him an antifebrin (grs. v) to be taken whenever pains were particularly severe. One week later patient stated that he had not felt so well for a year. The first powder checked the pain in less than half an hour. When the pains recurred they seem to have been less violent, and, each time, five grains of antifebrin sufficed to check them, and so, after five days of this treatment, and after taking forty or fifty grains of antifebrin, patient is, temporarily at least, entirely free from pain."

July 8. Patient has had slight recurrence of the pains during the past week, but they were apparently far less severe than they were before. No sweating and no prostration were caused by these doses.

ALCOHOLIC CIRRHOSIS OF THE LIVER.—MM. STRAUSS and BLOCQ have made numerous experiments in regard to this matter. They injected directly into the stomachs of rabbits daily a dose of 15 grams of a mixture of absolute alcohol, methylic alcohol and 1 part of water. The animals usually fell at once as though by a stroke of lightning, and remained in deep coma for several hours. When the animals were killed after a certain time the liver was found to present to the naked eye no very marked changes, and the surface was smooth; but the cut surface showed the acini apparently surrounded by a grayish-red zone or line. In the livers of rabbits intoxicated for four or five months the ultimate perilobular portal channels appear infiltrated with embryonic cells. When intoxication is maintained for six or eight months the lobules are surrounded by a ring of embryonic cells. There is thus produced a monolobular cirrhosis which realizes almost perfectly the scheme of Charcot. Nothing is more natural than this localization of the lesion. Alcohol reaches the liver through the portal vein, and one would naturally suppose that it would affect at first that part of the organ with which it comes in most perfect contact.—*Semaine Médicale*, July 20, 1887.

ANTIPYRIN IN UTERINE COLIC.—M. CHOUPPE reported to the Société de Biologie his successful treatment of two cases of uterine colic with antipyrin injections. The first was in the case of a woman who suffered at each menstrual period with very painful colic which was with difficulty overcome by opium and chloral. Antipyrin in the dose of 1 gram gave rapid relief. The second was the case of a woman suffering from uterine colic following childbirth. The pains were lessened for five hours by a first injection, and disappeared completely under the influence of a second.—*Semaine Médicale*, July 20, 1887.

NEW SUBSTANCE IN TUBERCULAR TISSUE AND ORGANS.—E. FREUND has found in various organs, as well as in the blood of tubercular patients; and both in the tubercle granules and in the diffuse tubercle tissue, a substance which he regards as cellulose because of its elementary analysis and its reactions. He looks upon it as an essential part of the tubercular growth and of the blood of tubercular individuals. This substance was not found in tissues and blood affected by various other diseases.—*Centralbl. für klin. Med.*, No. 27, 1887.

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THE EDITOR OF THIS JOURNAL would be glad to receive any items of general interest in regard to local events, or matters that it is desirable to call to the attention of the profession. Letters written for publication or containing items of information should be accompanied by the writer's full name and address, although not necessarily to be published. All communications in regard to editorial work should be addressed to the Editor.

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DIET IN ALBUMINURIA.

First in importance in the hygienic treatment of albuminuria, says Dr. Purdy, in his excellent work on Bright's disease, may be ranked the diet of the albuminuric patient. It is a subject to which very much study has been given, and which requires very much more. In some observations recently made DR. T. GRAINGER STEWART, of Edinburgh, has sought to throw additional light on the question of the possibility of producing albuminuria by diet in persons whose kidneys were healthy, and to the effect of various forms of diet in patients affected with albuminuria.

That slight, and sometimes marked albuminuria appears after meals is a well-known fact; the mere ingestion of food of any kind will produce albuminuria in some persons, while others are only affected by particular articles of food. The experiments of Stokvis, Lehmann, Lauder Brunton, Power, Dobradin, Claude Bernard and others in regard to the causation of albuminuria by egg-albumin, are so well known as not to require more than mention here. In order to gain further information on this question Dr. Stewart selected four persons whose urine showed no albumin even when tested with picric acid, and whose condition offered no objection to such a test.

The first patient, one with locomotor ataxia, took ten raw eggs daily, in addition to his ordinary diet, for nine days. Albumin appeared in two days from the beginning of the experiment, and while not large was sufficient to be shown by picric acid. Twice it was shown by nitric acid, and each time an excess of the acid dissolved the coagulum, showing that it was not egg albumin but blood albumin that was present. The albumin persisted from the day on which it appeared, but disappeared on the day on which the eggs were stopped. In the second case, one of mitral incompetence, nine eggs were given for seven days. "Albumin appeared on the first day, persisted throughout the experiment, and disappeared when the eggs were discontinued." It was distinct with picric acid, but was never shown by nitric acid. The third case, a person free from organic lesion, was given ten eggs daily for three days in addition to his ordinary diet. Albumin was distinct with picric acid on the first and third days; on the second it was sufficient to show with nitric acid, and the opacity disappeared when an excess of acid was added. The fourth case, one of chorea, did not bear the eggs well; only three were given, and for three days only. In this case also albumin was shown by picric acid while the experiment continued. These experiments show: "that the introduction of raw egg-albumin into the stomach causes albuminuria; that the albumin is always in small quantity; that it disappears when the ordinary diet is resumed; and that it is not egg-albumin, but serum-albumin which is discharged." This kind of albuminuria, therefore, cannot be explained on the theory of the absorption of egg-albumin as such into the blood, and its discharge from the kidneys; and the experiments further explode the speculation, in regard to this question, of the minute size of the molecules of egg-albumin and its greater transfusibility.

By way of explanation Dr. Stewart offers two suggestions: First, owing to the large amount of albumin digested and absorbed the blood becomes surcharged with this material, and some of the excess escapes by the kidneys. The second suggestion is related to some recent investigations made by Ralfe, Noël-Paton and Oliver. Ralfe has shown the relation of functional albuminuria and hæmoglobinuria to the rate of destruction of the red corpuscles, and the formation of urea. Noël-Paton has shown some of the relations existing between bile secretion and the formation of urea. Oliver has shown that urea is mainly formed from the red corpuscles, and that the most active period of urea formation is when the liver is actively secreting during digestion. In the light of these observations, then, it is reasonable to suppose "that in our experiments the liver was stimulated to excessive activity owing to the excessive amount of proteids ingested, that thus the red corpuscles were more rapidly destroyed, and that the albumin liberated from them not being all transformed into urea, was in part discharged by the kidneys." This suggestion is partly confirmed by the

facts observed in the test cases as to the urea discharge. In the first three cases the urea was over normal while the eggs were taken, and fell back when the eggs were discontinued.

From some experiments made on boys with cheese and walnuts Dr. Stewart draws the general conclusion in regard to the effect of diet on the production of albuminuria in healthy persons, that while the ingestion of food has been shown frequently to produce albuminuria from idiosyncratic peculiarities, particular articles of diet induce it in some people, and while we may succeed in inducing it by the use of special articles of diet, yet the quantity of albumin is usually minute, and it has little tendency to persist after the return to ordinary food.

In regard to the question of diet in Bright's disease, Dr. Stewart made some experiments with five diets: ordinary, large, milk, low, low diet with eggs. It may be said that the compositions and weights of these forms of diet are as follows: ordinary diet, 59 ounces, 15.24 parts of carbonaceous and 4.25 nitrogenous matter; large diet, 71 ounces, 19.10 parts carbonaceous and 5.68 nitrogenous; milk 60 ounces, carbonaceous 6.4, nitrogenous 3.6; low diet, 65 ounces, carbonaceous 18.98 parts, nitrogenous 2.94; low diet with eggs, 8 raw eggs 14.5 ounces, carbonaceous 4.35, nitrogenous 5.8, and otherwise as in low diet. The points determined in each case were the weight of the patient, daily quantity of urine, its specific gravity, the amount of urea, and the amount of albumin in grams per litre, determined by Esbach's method.

In three cases of inflammatory Bright's disease the experiments, while not sufficient to warrant general conclusions, supported the view that milk diet or low diet are better suited to such cases than ordinary or ample diet. In a case of cirrhotic Bright's, with inflammatory superadded, the ordinary and milk diets were used for periods of six days each, but without showing any effect upon the amount of urine or urea, and the albuminuria was not diminished by the milk diet. From experiments on several cases of pure cirrhosis of the kidneys Dr. Stewart is inclined to think that in this form of Bright's disease the diet is a less important element than it is in the tubular inflammation. He has had no opportunity of making an extensive series of experiments on cases of waxy or amyloid kidney, but so far as his evidence goes he is inclined to think that the good nourishment which is otherwise indicated in that disease is not contra-indicated by the state of the kidneys, even though their vessels appear to be in a condition permitting of more ready transudation of albumin than is the case with healthy vessels.

The diet in the forms of albuminuria not dangerous to life may be given a short consideration. In cases of febrile albuminuria, says Dr. Stewart, the question of diet is usually of little moment, but in some, and especially in scarlet fever, there is a special liability to the occurrence of renal inflammation, and there is no doubt that a copious diet rich in nitrogen is very dangerous, and that something of the nature of low or milk diet is best for such fever cases, in convalescence as well as during the fever. In the dietetic and persistent varieties of functional albuminuria individual peculiarities as to food are to be studied. In accidental albuminuria diet is often of great importance. "Above all, in cases of catarrhal inflammation of the urinary tract bland and milky diet is to be recommended. I have often seen," says Dr. Stewart, "great advantage in such cases from the adoption of an exclusively milk diet." But in some of the cases of albuminuria ordinary diet is best. Alcohol is to be avoided in all cases of Bright's disease and in cases of inflammatory accidental albuminuria, unless there be need of direct stimulation of the circulatory or nervous systems.

UNSATISFACTORY MEDICAL APPOINTMENTS.

Under this caption in THE JOURNAL of July 30th, 1887, we copied a preamble and resolution from the reported proceedings of the State Medical Society of W. Va., disapproving the action of the Governor of that State in appointing Dr. Geo. I. Garrison, of Wheeling, to fill a vacancy in the State Board of Health, on the claim that such appointment was in violation of "the letter and spirit" of the law defining the qualifications required for eligibility for membership in such Board. We have received from Dr. Garrison a copy of the Wheeling *Daily Register*, of August 18th, 1887, containing the Governor's reply to the charges made against him, from which we copy all that relates directly to the question of violation of the law in appointing Dr. Garrison as a member of the State Board of Health. It is as follows:

"What the objections are to Dr. Garrison's appointment the resolutions do not disclose; but I have ascertained from members of the Society that they are,

"First—That he had not practiced medicine the required time—twelve years—before his appointment.

"Second—That he received his diploma from a medical college after one course of lectures, instead of two.

"Until 1881 there was no law in this State regulating the practice of medicine, and neither examination nor diploma was required of the practitioner.

"The following is the law applicable to this case:

"'1. There shall be a State Board of Health in this State, consisting of two physicians residing in each Congressional district thereof, who shall be graduates of reputable medical colleges, and who shall have practiced medicine for not less than twelve years continuously. They shall be appointed by the Governor, and hold their offices for the term of four years, unless sooner removed as provided in this chapter. But the members of said Board now in office shall, unless removed therefrom, remain in office until their successors are appointed and qualified.'

"From the evidence before me, and of which I have no doubt, Dr. Garrison had been practicing medicine for six years before the passage of the Act of 1881, but was not at that time a graduate of any medical college.

"In June, 1881, he appeared before the State Board of Health, was duly examined, and thereupon a certificate was issued in due form authorizing him to practice medicine.

"Dr. Garrison attended the Fall and Winter Course of Jefferson Medical College, 1885–6, was admitted into the senior class and was graduated as Doctor, in April, 1886."

The exact facts, then, as presented by the Governor himself are, that Dr. Garrison had practiced medicine in the State of West Virginia, six years prior to June, 1881, but without having attended or graduated in any medical college. In June, 1881, he was examined and licensed to practice medicine by the State Board of Health. In 1885–6, he attends one course of lectures at a medical college, and graduates at the close of the session, in April, 1886. In 1887 he is appointed by the Governor a member of the State Board of Health. Therefore, according to Governor Wilson, six years' practice without either license or diploma, five years with a license from the State Board, and *one* year with a diploma from a medical college, is equivalent to being "a graduate of a reputable medical college, and in the practice of medicine for not less than twelve years continuously." It is not surprising that the members of the State Medical Society should differ from the Governor in this interpretation of the law. We claim to know nothing concerning the qualifications of Dr. Garrison, any more than we do concerning those of Dr. H. V. Ferrell, of Williamson Co., who was recently appointed by Governor Oglesby a member of the Illinois State Board of Health.

THE INTERNATIONAL CONGRESS.—Before another number of THE JOURNAL reaches all of its readers, the Ninth International Medical Congress, of Washington, will have completed its sessions, and its work have passed to the hands of the historian. It is not for us to predict what the character of the work will be; but we have the satisfaction of knowing that, through the faithful work of the Executive Committee and the untiring zeal of the Local Committee of Arrangements at Washington, every preparation has been made for the accommodation and entertainment of an International gathering of medical men equal in numbers and in scientific and professional achievements, to any that have preceded it.

ALL THE CONDUCTORS on the Maine Central Railway have been provided by the management of the road with cases containing all the remedies to be used in cases of accident, such as linen and rubber bandages, plaster, surgical instruments, medicines, liniments, etc., with books of directions. Every conductor will be his own doctor. The occasions are frequent also in times of accident when physicians are passengers upon trains, but they are often handicapped by lack of proper instruments. A further step in the right direction would be to have all trainhands and employes instructed in "aid to the injured."

ASSOCIATION OF AMERICAN MEDICAL EDITORS.—The officers of this Association, in accordance with a resolution adopted at the last annual meeting, have completed the arrangements and will give an elegant Banquet to the medical editors from other countries, on Monday evening, September 5, at the Riggs House, Washington, D. C. That it may not conflict with the general Conversazione of the Congress in the U. S. Pension Hall the same evening, the Banquet will begin at 10 P.M.

AMERICAN ACADEMY OF MEDICINE.—The next Annual Meeting of this Society will be held in Columbian College, Washington, D. C., on Saturday, September 3d, at 12 o'clock, M. A collation will be served in the evening of the same day at the Arlington House. The meeting, though short, will doubtless be one of interest and enjoyment.

NATIONAL CONFERENCE OF STATE BOARDS OF HEALTH.—The fourth annual meeting of the National Conference will be held at Willard's Hotel, Washington, D. C., Wednesday and Thursday, September 7 and 8, 1887, commencing at 10 o'clock A.M.

SOCIETY PROCEEDINGS.

MEDICAL SOCIETY OF THE DISTRICT OF COLUMBIA.

Stated Meeting, April 13, 1887.

THE PRESIDENT, JOS. TABER JOHNSON, M.D., IN THE CHAIR.

DR. LACHLAN TYLER read a paper on

DIPHTHERIA AND TRACHEOTOMY.

(See page 269.)

DR. S. C. BUSEY said that in view of the recent discussion on this subject before the New York Academy of Medicine, he had no desire to open the debate. He had nothing new to offer and could only give expression to his opinions and experience. Some years ago, when the subject was very elaborately discussed before this Society, he stood almost alone in advocacy of the doctrine of the unity of diphtheria and croup. Now, he believed, the doctrine of unity was generally accepted. Not only did he accept the doctrine of unity, but he believed that croup, diphtheria and inflammation of the tonsils and pharynx were interchangeable affections. This view had been taught by Trousseau, Brettonneau and others, and he thought he had frequently witnessed illustrations of it both in private and hospital practice. Recently in one family five cases had occurred. The first was a case of pharyngitis in which there was no membraneous formation, nor any local evidence of a diphtheritic character. The child was—according to his uniform custom in all such cases—isolated, only the mother and adult sister, who nursed the patient, being permitted to enter the room. A few days after the recovery of this child, another child, who had been allowed to remain in the room previous to his first visit, was seized with diphtheria, perfectly marked from the beginning. This child died, and subsequently the mother and sister, who had nursed both children, were taken with diphtheria. A nursing baby remained with the mother during the first night of her sickness and also had the disease. Some years ago, during his service at the Children's Hospital, diphtheria, croup of the larynx and simple sore throats appeared in the same ward, during the same period of time, in a manner which had convinced him of their interchangeability.

Diphtheria is not a disease peculiar to large cities, or to dense populations, but prevails with equal, if not greater virulence and mortality in villages and sparsely populated regions. It is most prevalent in those regions of country, and in those localities where anginas are most frequent, and at that season of the year when the climatic and atmospheric conditions are most favorable for the production of sore throats, and among those most exposed to such causal influences. These considerations favor the view of their interchangeability. He believes diphtheria to be primarily a local disease, and that systemic infection, sooner or later, and to a greater or less degree, took place. Hence he believed that any sore throat, under favoring conditions, might become diphtheritic. For this reason he always isolated cases of sore throat.

Clinically, he divides diphtheria into three forms. The first is so mild that the constitutional symptoms are very slight or absent. The fever is usually very slight and the membraneous formation is generally limited to the tonsils. The intensity of the fever is not, however, diagnostic of diphtheria for it is frequently very high in cases of simple sore throat. The second form is characterized by marked local symptoms and grave constitutional conditions. This is the most prevalent form, and many cases proved fatal. The third form comprised those cases in which the patient seemed from the beginning to be overwhelmed with a septic and potential poison, and death is inevitable. Such cases seemed to be constitutional from the beginning, and could not be explained upon the theory of local origin.

Diphtheria is both contagious and infectious. Its contagiousness is limited to the direct contact of the poison with an irritated or inflamed surface; and its infectiousness is certainly less than that of the exanthemata. The former property is proven by the well-known fact that physicians in attendance have contracted the disease by the contact of the poison on inflamed surfaces; and the latter is shown by the escape of other members of a household in which there is a case of diphtheria. He has probably seen fewer cases of diphtheria than other physicians of equal opportunities. This he attributes to the fact that he always isolates cases of sore throat in children, and has always taught his clientèle the importance of prompt and proper attention to the simplest angina. He regards all cases of diphtheria, however mild in the beginning, as dangerous; hence at the onset he begins with a vigorous local and constitutional treatment.

Diphtheria is characterized by inflammation, the production and absorption of a poison, a membraneous exudation, and the emanation of a poison. Except, perhaps in one form, the constitutional symptoms of systemic infection follow the absorption of the poison generated during the progress of the disease.

His treatment is both local and constitutional. He avoids all injury to the inflamed parts. In fact he does not favor the rapid dissolution of the membrane unless it interferes either with deglutition or respiration; but prefers gradual dislodgement of the membrane by warm fomentations or poultices, externally, and warm, alternating with cold antiseptic spray. As an antiseptic he prefers carbolic acid. Has not used the bichloride of mercury solution. He has had no experience with trypsin, but has frequently succeeded in dissolving the membrane with a solution of lactic acid, employed either as a lotion or a spray. After dissolving the membrane he had brushed the inflamed surface with the oleate of mercury and at one time believes it prevented the re-formation, but has abandoned the practice because additional experience had satisfied him of its uselessness. When the membrane is removed by solution it usually reforms, but when slowly detached by the method stated it does not often reappear. Of the constitutional remedies he considers the tincture of the

chloride of iron, a nutritious and sufficient dietary, alcoholic stimulants when needed, quinine in tonic doses, and the chlorate of potassium, in moderate quantity, as the most important. The iron is both tonic and antiseptic, the quinine is tonic and antipyretic. The chlorate of potassium is dangerous when employed, internally, in large quantities. He has no doubt that it may produce nephritis. For spraying he employs a carbolized saturated solution of chlorate of potassium. He has employed the bichloride of mercury internally, but has lost every patient to whom it was given. Many children are lost because of the failure of the nurse to execute the orders of the attending physicians, and by the opposition of the parents. If every child suffering from diphtheria could be taken to a hospital and isolated from its parents he thinks many cases would be saved that are now lost.

Tracheotomy in cases of diphtheritic croup very often fails because the operation is performed too late. Intubation gives promise of greater success.

It is not a cutting operation, and even if it does not bring relief it does not preclude the possibility of tracheotomy. It can be done early without fear of harm, and it does not necessarily require an expert to perform it. Dr. Montgomery reports 13 cases of intubation with six successes, a better proportion than tracheotomy would probably give. The tube should be small and not fill the lumen of the larynx so that the membrane may be coughed up alongside the tube.

To determine the time for operation is most difficult. The opinion is now, as it always has been, that the early operation is the most successful, but it is almost impossible to determine the time at which it is an operation of expediency. Later it becomes an operation of necessity. Perhaps if the rule was to perform tracheotomy immediately on making the diagnosis more cases would be saved. In his opinion the operation is indicated as soon as our best efforts fail to remove the membrane. This practice cannot, however, be carried out in private practice, because an operation which will not guarantee a success is resisted by the parents until it is too late. Recession of the chest wall during inspiration is the usual indication for tracheotomy, but in his opinion that is at too late a period. The presence, however, of a false membrane in the larnyx is not always the indication for tracheotomy. He recalls an instance where he was called to the Children's Hospital to see a case of diphtheria. When he arrived he found the surgeon just about to perform tracheotomy. He declined to permit it, but gave an emetic of turpeth mineral. The membrane was detached, and the child got well.

Dr. Swan M. Burnett thought that it was well to have the opinion of all the departments of medicine upon the subject, and for the ophthalmologists he would speak. It is well known that we have a diphtheritic conjunctivis as well as diphtheria of the larynx. High authorities in modern ophthalmology have been able to differentiate a croupous from the diphtheritic form of conjunctivitis, and as we have the eye under observation from the beginning to the end of the trouble this duality cannot be disputed. The diphtheritic membrane is part and parcel of the conjunctiva itself, and cannot be wiped away. In what we call the croupous form the membrane is on the surface and can be easily wiped away leaving a bleeding surface. In diphtheria the lids are hard and swollen, red and shiny. These conditions are not present in as great a degree in the croupous form. The treatment of both is nearly the same although the croupous form is easier to cure. Antiseptics play an important part in this. At one time a strong solution of nitrate of silver was used in Germany, but the treatment is not now so heroic. Luckily the diphtheritic form is rare in this country, and he has himself never seen a case of it.

Dr. Busey said that what Dr. Burnett called croupous membrane was not diphtheritic but a simple exudation.

Dr. Burnett replied that it is only in recent years and after the most careful research that the difference between the two membranes was discovered, and their characteristics well proved.

Dr. J. W. H. Lovejoy believed with Dr. Busey that diphtheria was at the beginning a local disease, which in a short time becomes constitutional, and should be treated as such. A few months ago he attended a child with a diphtheritic membrane over the soft palate and naso-pharnyx. He gave at once iron and chlorate of potash both internally and as a gargle, and in addition lime water applications both day and night. The membrane, however, increased, and he resolved to try trypsin. He dissolved 30 grains of trypsin and 15 grains of bicarbonate of soda in an ounce of water, and ordered the throat to be sprayed with that every hour, meanwhile keeping up the other treatment. After a day's use of this spray he was astounded to find that nearly the whole of the membrane had disappeared. He considers the happy termination of the case was due to the fact that the trypsin dissolved the membrane and thus allowed the gargle to reach the throat. He thinks that an inflamed throat forms a suitable nidus for diphtheritic infection. Ten years ago he was attending a case of diphtheria, and upon going out of the house in a heated condition he took cold. In two days he discovered a diphtheritic patch upon his tonsil, and he was quite sick with the disease. He has not for many years used irritating substances to the throat, but has relied chiefly upon iron and chlorate of potash. He is also opposed to any surgical interference. In a case in which there was a copious deposit of membrane and great difficulty in swallowing, he was advised by a consulting physician to remove a small portion of the uvula which was much swollen. This he did, but in a few hours the membrane was over the raw surface and the child died. From this, and the reports of other successful cases from the use of trypsin, he would recommend that article for a fair trial.

Dr. M. Murray said that diphtheria was certainly a local disease at first. He has seen Störck on three occasions remove a diphtheritic membrane with a brush, and paint the denuded surface with a solution of bichloride of mercury, and the membrane had never returned.

DR. L. TYLER did not believe that the lack of oxygen was the principal indication for tracheotomy, as we can supply that by giving inhalations of it. The effect is not, however, the same as from tracheotomy. Those cases in which it is difficult to decide whether the disease is local or general are the exceptions which "prove the rule" of its local origin. He prefers to use quinia in small tonic doses, to large antipyretic doses. As antipyretics he would prefer to use either cold or antipyrin, the latter only when there is no great depression of the vital forces. He uses in his paper the term "precautionary tracheotomy" by which he means an early operation, and so far as he knows the expression is original.

He considers tracheotomy one of the easiest operations in surgery, but the trouble is we delay it until it is often too late. Thus a dread of the operation has been engendered among the profession and the laity from the number of fatal cases, which are due to the disease and not to the operation. Tracheotomy of itself is not a dangerous operation as it does not kill when done for other reasons than for diphtheritic stenosis. In on operation which he did the child was already *in extremis*. He etherized and opened the trachea, and the patient was somewhat relieved, but it died on the table. Another case he saw in the morning and was convinced that tracheotomy was needed, but he had not the courage of his convictions, so he put it off a few hours until he could obtain a consultation. At the end of that time the membrane had spread so extensively and the constitutional infection had become so profound that an operation would have been useless and was therefore not performed.

DR. J. FORD THOMPSON said that he was surprised to hear Dr. Tyler call tracheotomy an easy operation. For his part he had studied the subject carefully and has done many operations; yet he feels as much trepidation on beginning the procedure to-day as he did at first. He does not think that tracheotomy for diphtheria is comparable with tracheotomy for any other condition, nor is the operation as difficult on adults as on children. There is scarcely a fatal case of which it is not said that the operation was done too late. It is his custom never to operate on a case that can be saved by other means, and in one winter he saved four children that were almost moribund when he began the operation. It is said that the early operation saved more children than the late. This may be so, for it is probable that many cases would have recovered without the operation. He has had but one case die on the table. Merely opening the trachea is not going to stop the disease but it allows the child to get air and tide over the height of the affection. The best indication for the operation is stenosis of the larnyx, and this symptom we do not get when we operate early.

The new operation of intubation seems to offer great advantages. It can be done early, it is free from the shock of tracheotomy, and above all it does not preclude opening the trachea at a later period. It is not yet proved that it can supersede tracheotomy, but he intends giving it a trial at the first opportunity. He is not going to give up tracheotomy because of many unsuccessful cases. Anæsthesia is not always advisable for the operation as it adds a complication, and besides many cases are so far gone as practically to have no feeling. Medicinal treatment has made no advances. After much arguing we have come back to the old style of treatment.

Practically and clinically speaking a distinction between croup and diphtheria is of no value. He has seen cases in the same family some of which looked like croup and some like diphtheria, there may be a difference but he does not think so. Where the glands are swollen in either case tracheotomy is less favorable.

DR. BUSEY said that he more often used quinine in tonic than in antipyretic doses. He admits that antipyrin is a better antipyretic than quinine, but owing to the depression which it is likely to cause it is not so applicable to diphtheria as to fevers. Dr. Thompson says that tracheotomy is not a curative operation and then intimates that he does not believe in medicines. The operation admits air which is certainly curative to a limited extent, and this, if for no other reason, justifies the operation. From what he says one would suppose that tracheotomy is practically a hap-hazard procedure, he does not supply the symptoms indicating its necessity, nor does he tell us when it becomes imperative. There should be some scientific basis for its performance, and there should be some other reason than that of a mere *dernier ressort*. At what time is the operation practicable? When we have agreed upon this we will have gained much. Some surgeons, as soon as the operation is done, abandon all medicinal treatment, which it is most important to continue and would probably save many cases. The croupous membrane which Dr. Burnett describes is not a membrane but a pultaceous semi-fluid exudation.

DR. THOMPSON did not give the indications for tracheotomy as they are well described in the books. A depression of the epigastrium below the sternum, and not of the intercostal spaces, is the proper indication for tracheotomy. The depression of the intercostal spaces is a later and coarser symptom. When he says the operation has no curative effect, he means that it will not stop the spread of the membrane. Diphtheria has a self-limited course to run and the longer we put off the fatal issue the greater the chance of recovery. From this standpoint tracheotomy is curative. It is said that an acute case of diphtheria never gets well after tracheotomy, that a subacute case has a better chance and that a chronic case has the best chance of all. The early operation is not curative. Every year we have a new remedy which is put forward as a specific, but after a trial we have returned to the old fashioned iron and chlorate of potash mixture.

He invariably gives his patient both local and general treatment. He uses a large antiseptic spray, with tonics, nourishment and stimulants. In his opinion the early operators will, in the long run have a smaller percentage of deaths than the late operators; but they will have performed many unnecessary operations.

DR. BURNETT remarked that there could be no

doubt as to there being a croupous as well as a diphtheritic membrane in the eye. This has been the outcome of many observations by careful observers.

Dr. J. B. Hamilton said that the contra-indications for tracheotomy were of importance as regards the relation between physician and surgeon. In one case which he had been called to operate upon he found a double pneumonia and a capillary bronchitis. Considering that the patient was certain to die he refused to do the operation as it would simply bring discredit to the profession. The invasion of the larynx is, in his opinion, the indication for operation. The operation itself may be fatal when it is followed by pneumonia or bronchitis. Hæmorrhagic cases are not relieved by the operation. There are some cases in which the hæmorrhage is from the back of the nose that are temporarily relieved by tracheotomy, but death from exhaustion is apt to ensue. This complication he thinks is a more common one than is generally supposed. He regards the operation as one of the most trying ones in surgery.

Dr. L. Tyler in closing said that Dr. Thompson's remarks show that he is in the foremost ranks of one class of thinkers. He could not agree with him that tracheotomy was a difficult operation, and without admitting the possession of any special cut-throat proclivities he thought it a most fascinating one. While pneumonia following tracheotomy is a remote possibility the very possibility is an indication for an early operation before the lungs have become so congested as to make its sequence more probable. We must understand that the operation is a curative one. As a *dernier ressort* it may only be productive of euthanasia and anticipatory of a fatal issue from asphyxia. Properly speaking there is no such thing as the *croupous* membrane mentioned by Dr. Burnett, but rather a *diphtheritic* membrane. Croup is a *symptom* of diphtheria, and, in his opinion, the amount of membrane depends upon the extent and degree of the inflammation. He agrees with Dr. Lovejoy in the opinion that exposure to cold is a cause of diphtheria and he thought he had been able to trace cases to this origin. Dr. Fernald, in his paper at the previous meeting, had given a strong argument in favor of trypsin as a solvent of the membrane and he would join in recommending its use upon the strength of the results which he had experienced in his case of aural diphtheria.

FOREIGN CORRESPONDENCE

MUNICH.[1]

The University—Over-crowding in the Profession—Doctors and Rich Wives—Nussbaum; his Work—Extirpation of Struma— Ovariotomy — Winckel—Perineo-Plasty—Angerer—Excision of Knee for Tubercular Osteo-Myelitis—Heidelmeyer.

Dear Dr. Fenger:—When I arrived in Munich I felt at home, as I attended lectures here during the year 1878. I remained for a whole week, and during this time saw many interesting cases with my former teacher of surgery, Professor Nussbaum, and Professors Winckel and Angerer. The Allgemeine Krankenhaus has undergone no change for the better since I attended before. The University in this city now numbers 1100 medical students. Considering the number of universities in Germany and the large number of students in attendance almost everywhere, it becomes a serious question what is to become of these young men after their graduation. The country is now more than supplied with physicians, and if the increase continues for a number of years in the same ratio it is difficult to conceive in what way the medical men are to earn their daily bread.

The German government is well aware of the prevailing evil that too many graduates of the gymnasia choose the medical profession, and has taken steps to lead them into other channels by calling their attention to the existing evil through the columns of the public press. Only a few days ago Professor Hegar, of Freiburg, informed me that unless a decided change occurred in this direction the medical profession would soon degenerate into a "proletariat." It is well known that even at the present time, in some country towns, doctors will make visits, and even supply the necessary medicine, at half a mark. An ignorant "Dienstmann" would look with scorn at anything less than this for carrying your valise from the depot to the hotel. We have many cheap doctors in America, but their fees must be considered as royal when compared with such a beggarly sum. There is great danger that the same condition will prevail in America at no distant time, unless the medical colleges adopt timely measures to prevent over-crowding of the profession by elevating the standard for admission to the study of medicine as well as graduation. Nothing will degrade the profession so quickly in the eyes of the public as over-crowding. In the struggle for an existence men will resort to ways and means which they know are wrong.

It is quite a fashion in Europe, among medical men, to marry rich wives in order to keep the wolf from the door; but in my judgment such a course only aggravates the social and professional standing, as wealth acquired in such an easy way brings obligations which are antagonistic to scientific advancement. Unless a man acquires wealth by his own efforts he will seldom find his way into the front ranks of the profession. It is better for a man to remain poor as long as he lives, and labor honestly and perseveringly in the interests of his chosen profession, than to be constantly handicapped by a rich wife or her many relatives. It is seldom that a rich woman has the good sense to satisfy her ambition in promoting the scientific attainments of her husband; her interests are usually outside of the things that pertain to the profession. Only too often her greatest, yes, her only desire is to become a conspicuous figure in society, and as she cannot attend the balls, receptions and theatres alone, the man who married her for her money must do at least what he can to make her happy, and must go along. In this way perhaps six evenings in the week are spent, and

[1] By permission of Drs. Fenger and Senn.

the books and medical journals, if money is spent for such things, become covered with dust.

That this picture is not overdrawn you can verify in your own city, where many of the richest doctors, who ought to occupy prominent positions among their colleagues, are not known outside the small circle of friends and acquaintances where they are tolerated only on account of their wealth. Science is making such rapid strides that its devotees have absolutely no time for the doubtful pleasures which society can offer. The good standing and purity of our profession can only be maintained by admitting into its ranks only men with natural adaptations and an innate love and devotion for the advancement of medical science and its collateral branches.

Contrary to several reports that I had received, I found Professor Nussbaum in tolerably good health, and attending to his duties in the hospital with the same regularity and enthusiasm as nine years ago. To those who have known him for many years his present condition is a mystery. During the Franco-Prussian war he suffered from coxitis, which left one of his hip joints in a contracted anchylosed condition, and since then he has had the misfortune of fracturing several of his bones; and yet after so much suffering and confinement he retains his mental vigor and works with the same enthusiasm as years ago. Physically crippled, mentally he is a giant. To follow such a man in his work for a few days ought to be enough for any man to stimulate him to follow such an illustrious example. Nussbaum has been a hard worker all his life time, and his work bears the stamp of originality. His enthusiasm carries him sometimes too far, and yet these extremes have often been productive of a great deal of good. He was one of the first apostles of antiseptic surgery in Germany, and his little book (Leitfaden der antiseptischen Wundbehandlung) went through four editions, and did more towards the general adoption of antiseptic principles in the treatment of wounds than all the rest of the German literature combined; but he is familiar, at the same time, with the American and French authors and writers. His lectures are always interesting and fascinating, and the lecture room and operating theatre are always crowded with students.

During the time I remained in Munich I had the good fortune to see him perform three capital operations, which I will briefly detail. The first was an extirpation of a struma. The patient was a girl 25 years of age, who had noticed an enlargement of the neck when she was 14 years of age. The swelling gradually increased in size until, for the last year, it has given rise to a great deal of discomfort, at times giving rise to suffocating sensations. The tumor was about the size of a hen's egg, located directly over the trachea. In his remarks on the operation attention was called to the serious consequences which have followed complete extirpation of the thyroid gland as described by Kocher under the title of *cachexia strumi priva*, as well as the results which have been obtained by experimental research. It was also stated that since complete excision has been abandoned tetanus had also disappeared from the statistics of struma operations. Kocher's incision along the anterior margin of the left sterno-cleido-mastoid was made, and the tumor well exposed. Until the capsule was reached layer after layer was carefully divided and all hæmorrhage arrested. With blunt instruments the base of the tumor on each side was reached, and the parts containing the large vessels isolated into sections, and divided between two ligatures. By resorting to these precautions the operation was rendered almost bloodless. The trachea was found somewhat compressed, but sufficiently firm to retain its shape after the removal of the tumor. In cases in which the trachea has become so compressed and atrophied from pressure that after the removal there is danger of suffocation from sudden collapse or flexion, he resorts to amputation of the middle portion of the tumor over the trachea with Paquelin's cautery, so as to leave the part which supports the weakened portion of the trachea. Portions of both lateral lobes were left in this case. The cavity was filled with iodoform gauze and the skin partially united. The iodoform gauze tampon was intended for drainage, and was removed the next day, and the wound at this time was more carefully sutured.

The second case was an ovariotomy on a patient 67 years of age. The tumor had been noticed two years ago, but had increased in size rapidly for the last few months. The abdomen was moderately distended, fluctuating, uterus high, but in the pelvis a number of hard nodules could be felt. Attention was called to the difficulty of differentiating in some cases between ascites and ovarian cyst. In very obscure cases a positive diagnosis is only possible by an exploratory incision. During the operation the temperature of the room was at least 95° F., which made not only the operator but all the students perspire freely. The abdomen and pubes were shaved and thoroughly disinfected the day before, and kept covered with a compress saturated with a carbolized solution. The abdominal incision was at least four inches in length. The tumor was tapped with a large straight trocar and drawn forward into the wound with forceps, and rapidly emptied by incision and crushing of smaller cyst with the hand introduced through the opening. The pedicle, broad and fleshy, was compressed with Helferich's constrictor, and the groove made tied with strong double catgut strings; below this point the pedicle was transfixed and tied in two parts, also with catgut. Above the first ligature the pedicle was again forcibly compressed between the blades of Langenbeck's forceps and burned off with Paquelin's cautery. The cleansing of the peritoneal cavity was done with large, soft sponges wrung out of a warm solution of carbolic acid. The abdominal wound was closed with a double row of chromatized catgut sutures and a typical Lister dressing applied.

All students are here admitted to laparotomies, and as the balcony above the operating table is usually crowded, it is remarkable that so few of the patients die of septic peritonitis.

The third case was another case of ovariotomy, also in an aged person. The tumor had been tapped

twice, and each time a large quantity of fluid removed. After each tapping a hard mass could be felt in the pelvis. The abdominal incision was again made long and led directly into the cyst, as the latter was firmly adherent. It took some time to find the point where the two surfaces were adherent. The adhesions were separated rapidly, and no attention paid to the oozing which occurred. The hard masses which had been felt in the pelvis after tapping proved to be smaller cysts, which were ruptured with the hand introduced through the opening made in the principal cyst. As the tumor had no adhesions in the pelvis, it could be readily brought out through the abdominal wound. The pedicle was treated in the same manner as in the previous case.

Two days later both patients were doing well. As the surroundings under which Nussbaum operates are by no means calculated to protect the patients against infection, we must attribute his good results to the careful antiseptic precautions which he follows before and during the operations and the manual dexterity which he has acquired after such a long and extensive experience in abdominal surgery.

A good deal of my time in Munich was spent in the lecture-room and wards of Professor Winckel. Professor Winckel is well and favorably known by his works on gynecology and childbed fever, as well as by his numerous valuable contributions to medical journals and society transactions. He organized the German Congress for Gynecology and was elected as its first President. He made an extensive tour through the United States and Canada last year, where he made valuable personal acquaintances. He is one of the leading gynecologists on the Continent, and has a better and more intimate acquaintance with the literature of his specialty than any other specialist. He is now writing a text-book on obstetrics, which will undoubtedly take the place of the most popular text-book on the same subject written by the lamented Carl Schroeder. Professor Winckel has been a teacher almost since his graduation, and many of his pupils only a few years younger than himself are now distinguished surgeons and physicians. I was astonished when he told me that Professor Schoenborn, now of Würzburg, was one of his pupils, as the latter looks much older than his teacher. Winckel is a systematic worker, and never fails to make good use of his vacations to benefit his bodily health, and this undoubtedly explains his excellent physical condition. He is a great traveler and a most accurate observer. He is a hard student, a pleasant and forcible writer, a fascinating and enthusiastic teacher, a splendid diagnostician, and a brilliant and beautiful operator. He is a most valuable member of the Faculty, and will make his department one of the most attractive and successful in Europe. In his obstetrical wards the most scrupulous cleanliness prevails, and wherever necessary full antiseptic precautions are practiced, consequently indigenous cases of sepsis are almost unknown. His laparotomies are attended only by a few students, who must give proof that they have not been recently exposed to septic germs. I witnessed an ovariotomy in his wards which was done under strict antiseptic precautions and with a neatness and dispatch which would be difficult to excel. The patient recovered without a single untoward symptom.

His private course on operative gynecology is unsurpassed by anything of this kind. The entire organs of generation of the female are removed from cadavers, preserved in an aqueous solution of corrosive sublimate, and kept ready for use. The soft parts are placed in a Schultze's phantom and attached in such an accurate manner that the normal relations are preserved. On such specimens the student is required to perform all the more important operations in gynecology under the immediate supervision of his teacher. Some of the students assist in the operations. When I was present the students were all arranged around three tables with as many operators, while Professor Winckel walked from place to place and directed the work. All teachers of gynecology should imitate this method of teaching, as it is the only way which will furnish adequate material for the different operations, and which will familiarize the students with the details of the most important operations.

I was very much interested in a case of perineoplasty which I witnessed. The laceration had extended into the rectum, and after vivifying the retracted margins of the rectal tear, coaptation was secured with silkworm-gut sutures passed through the entire thickness of the recto-vaginal wall and tied on the vaginal side. The perineum was sutured with the same material after Hegar's plan. Professor Winckel has performed this operation in many cases in this manner, and has never observed a recto-vaginal fistula after the operation. The recto-vaginal sutures are allowed to remain for several weeks.

Professor Angerer is the successor of Professor Helferich, now of Greifswald, and has charge of the polyclinic in the Reisingerianum. The operating room holds about 100 students, and is daily crowded from 11 to 12. A large clinical material collects here, and many important operations are performed, as the institution contains a few beds where patients can remain for a limited length of time. Angerer is a a good lecturer and an expert operator.

Among a number of operations that I saw here I was most interested in a case of excision of the knee-joint in a little boy suffering from tubercular osteomyelitis of the inner condyle of the femur, and consecutive fungous synovitis of the joint. On a previous occasion a tubercular spot had been removed from the inner tuberosity of the tibia. The joint was opened by a transverse incision and division of the ligamentum patellæ. When the patella was reflected it was found that the primary focus in the tibia had not healed, but had extended into the joint; the internal condyle on opposite side of joint was the seat of a similar depot, also in communication with the joint. But the most remarkable condition was seen in the joint and recesses underneath the patella and quadriceps muscle. Only half of the joint was the seat of infection and secondary fungous proliferation, as the remaining portion of the joint, corresponding to the external condyle of the femur and the external tuberosity of the tibia, remained in

a perfectly healthy, intact condition, being separated from the diseased portion by a partition of firm connective tissue. This is the condition which had been described to me by Professor Koenig a few weeks before, in which nature makes an attempt to localize the extension of tubercular processes, even in joints, by throwing out a wall of cicatricial tissue. Portions of the condyle and tuberosity were removed with the saw, and the healthy portion of the joint was left intact. The tendon of the patella was sutured and the wound closed, except at points where bone was removed, where tubular drainage was established. A copious dry sublimated dressing was applied and the limb placed upon a posterior splint.

I suggested to Professor Angerer after the operation that, under similar favorable circumstances, it would be advisable to split off the remaining portion of the internal condyle to draw it downward until it could be brought in apposition with the head of the tibia, where it could be retained with one or two aseptic bone-nails. Such a modification would secure a better support for the tibia, and prevent a tendency to the formation of a genu valgum during the reparative process.

Professor Angerer drills his students thoroughly in surgical diagnosis, and makes them familiar with important details which are usually ignored in the larger clinics. In connection with the polyclinic is a small laboratory where, under the direction of Professor Angerer, bacteriological studies are made and specimens from the clinic examined under the microscope. It is such a laboratory as I have urged should exist in connection with every chair of surgery, for the purpose of developing and teaching surgical pathology. Mr. Heilmeyer, who works in this laboratory, is an expert in preparing and mounting specimens, and as the sale of his slides is his principal source of income, he deserves the patronage of all who wish to promote the welfare and happiness of an humble but devoted promoter of the science of medicine.

During my stay in Munich I enjoyed the hospitality and friendship of Professor Winckel, and I fear I shall not be able to reciprocate his kindness unless he undertakes another tour through the United States, an event which would be looked for with pleasure by a host of his American friends. N. SENN.

LETTER FROM VIENNA.

(FROM OUR OWN CORRESPONDENT.)

Etiology and Treatment of Asthma caused by Polypi and Catarrhs—Dr. Pawlik—Dr. Ehrendorfer.

At the last meeting of the Vienna "Doctoren-Collegium" Regierungsrath Prof. Schnitzler made a valuable communication on the etiology and treatment of asthma. He above all wished to direct the attention to those cases of asthma which were caused by polypi of the nose and by nasal catarrhs, and which had been neglected for so long a time. Diseases of the nose were a frequent cause of asthma, and in most of cases polypi of the nose, and among these especially mucous polypi, gave origin to bronchial asthma. Often already a simple chronic nasal catarrh was a sufficient cause for producing asthmatic disturbances of a high degree. These disturbances, however, did not develop owing to narrowing or obstruction of the nasal cavities, and neither by the continuation of the catarrhal inflammatory process to the mucous membrane of the nose or the pharynx, etc., as was suggested by some authors. They were of a reflex nature, and due to the irritation of the nasal branches of the fifth nerve, and sometimes also the olfactory nerve, which, on the other hand, produced a reflex irritation of the vagus and the phrenicus nerves. This irritation produced the bronchial asthma with all its known symptoms. Hence, according to the opinion of Prof. Schnitzler, the asthma was an innervation disturbance of the respiratory process, being produced by reflex, and the asthma resulting from polypi of the nose or chronic nasal catarrhs was particularly to be looked upon as a reflex neurosis taking its origin in the nasal nerves. The reflex irritation of the vagus first led to a spasm of the bronchi, which was in most of cases also followed by a spasm of the diaphragm owing to the irritation of the phrenicus. At the same time vaso-motor disturbances of the respiratory organs supervened—hyperæmia and augmented secretion of the bronchial mucous membrane—and the complex of the symptoms met with in cases of asthma was complete. But all the nerves mentioned above were not irritated in all cases of asthma, and all the organs which depended on them were not always affected either; sometimes the vaso-motor disturbances, and in other cases the spastic conditions, prevailed, and this fact accounted for the different explanations of the nature of asthma, each of which was justified, according to the opinion of Prof. Schnitzler.

Prof. Schnitzler then discussed the treatment of bronchial asthma, and especially that which was produced by polypi of the nose and nasal catarrhs, at full length. In cases of polypi of the nose, he had always obtained recovery of the asthma by removing the polypous affection, either by operation or by galvano caustic treatment. Before the asthmatic attack, he had often been able to cut it short by brushings of the nasal mucous membrane with a from 5 to 10 per cent. solution of cocaine. He had also obtained good results with the administration of the iodide of potassium in combination with chloral hydrate. During the attack, chloral hydrate (administered by the mouth or by means of clysters), and injections of morphine proved as the proportionately most efficient agents, but their effect was nevertheless not so constant as had been stated by some authors. The fumigations with saltpetre, stramonium, pyridin, etc., proved in some cases to be efficient; in others they failed to do so. As to amyl nitrite, the nitrate of silver, and nitroglycerine, they had a better effect in cases of cardial asthma than in bronchial asthma. Prof. Schnitzler passed an interesting and critical review of all the remedies which had been recommended in the treatment of asthma—the agents for precipitating the secretion, the climate, and pneumato-therapeutics, etc.. and objected to the efficiency of most of them; a fact which is very plausible, considering that the known Vienna laryngologist was

educated in the nihilistic Vienna school of Skoda and Oppolzer, of whom he is one of the worthiest disciples.

Dr. Pawlik, Docent of Obstetrics and Gynecology in the Vienna Medical Faculty, has been elected an ordinary Professor of these subjects at the Medical Faculty of Prague, (with Bohemian language). [There are in Prague two Medical Faculties, a German and Bohemian one.]

Dr. Ehrendorfer, late Assistant of Prof. Spaeth in the chair of Obstetrics and Gynecology, has been named as ordinary Professor at the Medical Faculty of Innsbruck (in Tyrol).

LETTER FROM PARIS.

(FROM OUR OWN CORRESPONDENT.)

Cocaine in Staphylorrhaphies and Plastic Operations—Retention of the Placenta after Miscarriage.

Dr. Ehrmann, of Mulhouse, Corresponding Member of the Paris Academy of Medicine, proposes the employment of cocaine as an adjuvant in certain staphylorrhaphies, whether simple or complemental. After having related the cases that came under his notice, Dr. Ehrmann concludes that the analgetic effect determined on the soft palate by a solution of cocaine is scarcely more than superficial, and that this local anæsthia, really precious for certain cases, can never replace chloroform in palatoplasty, nor even in staphylorrhaphy properly speaking, complete, in that which necessitates muscular sections, or detachments of the palatine bone. The cases where, in congenital fissures, the division is practised on only one portion of the soft palate where therefore a simple apposition is sufficient for union, these cases are assimilable to complemental or partial staphylorrhaphies, but they are very rare. In 50 subjects on whom Dr. Ehrmann performed plastic operations on the palate for congenital divisions, he met with only two who presented this arrangement.

In a very interesting paper by Dr. Budin, an Agrégé of the Faculty of Paris and Hospital Accoucheur, which was read before at the Academy of Medicine, on the retention of the placenta after miscarriage, the author, in response to discussions which have lately taken place at various learned societies observed that two principal complications may supervene in these cases, hæmorrhage and septicæmia. Against these accidents, the question is asked, whether manual and instrumental intervention are rational or necessary. To accept these hypothesis, it must be demonstrated: 1. That the retention of the placenta is really a source of frequent accidents. 2. That all digital and instrumental manœuvres which are resorted to in such cases present any danger.

To the first question, Dr. Budin responds by using facts observed by him at the Charity and at the Maternity Hospitals. Of a total of 210 cases of miscarriage (57 at the Charity, 153 cases at the Maternity) there were 46 cases of retention of the placenta, or 22 per cent. At the Charity there were no cases of hæmorrhage, at the Maternity 2 cases of slight hæmorrhage occurred at the moment of the removal of the placenta. Septic accidents were almost nil. There was only one death, that of a woman who entered the Maternity with bronchitis and fever, and in whom after a miscarriage the placenta was expelled after 60 hours and the patient died of intercurrent pneumonia 15 days after the miscarriage. Therefore, of 210 cases of miscarriage accompanied 46 times by retention of the placenta, there was only one death the cause of which could hardly be imputable to the miscarriage. As regards digital, instrumental or other manœuvres, they are inefficacious or dangerous. Different accoucheurs have observed severe hæmorrhages, endometritis, pelvic abscesses and even death resulting from interventions of this kind. Expectation and antisepsy are recommended in these cases.

A. B.

NECROLOGY.

JOHN WADHAMS RUSSELL, M.D.

John Wadhams Russell, of Mount Vernon, Ohio, was born in Canaan, Litchfield County, Conn., on January 28, 1804. His father, Hon. Stephen Russell, was repeatedly elected a member of the Connecticut Legislature, and his grand-father, Jonathan Russell, commanded a brig under General Lafayette's letters of marque in 1778. Dr. Russell's mother was Sarah Wadhams, of Goshen, Conn. His education until his thirteenth year was received at the common schools of Litchfield, whither his father removed in 1808. Then he was sent to Morris Academy, and under Rev. Truman Marsh pursued his studies and was prepared for, and admitted to Hamilton College in 1821. He pursued his classical studies with the Rev. Mr. Langdon, of Bethlehem, Conn., one year, as his impaired health would permit, and in the fall of 1823 went South. He took charge of an academy at Red Bank, Colleton District, S. C., six months and there commenced his professional studies with Dr. Sheridan, a scientific and noble hearted Quaker. Returning to Connecticut, he attended the Medical lectures at Yale College one course, and then going to Pittsfield, Mass., there attended the lectures in Berkshire Medical College. Subsequently, going to Philadelphia, he was a private pupil of Dr. George McClellan, and was graduated from Jefferson Medical College in 1827. Returning to Litchfield he there began the practice of his profession, and remained there for one year, during which time he delivered a course of lectures on anatomy and physiology to a private class of young men. In 1828 he removed to Ohio, and began practice at Sandusky City, where he remained but a few months, when he moved to Mount Vernon, in Knox County. He was a delegate to and member of the Centennial International Medical Congress which met in Philadelphia in 1876. At this meeting of the International Medical Congress Dr. S. D. Gross said, "it gave him great pleasure to introduce to his medical brethren, his esteemed friend and classmate Dr. Russell whose extreme modesty *alone* prevented him from being the leading surgeon of the land."

In 1828 Dr. Russell married Eliza, daughter of the Hon. William Beebe, of Litchfield, Connecticut.

She died in 1871, having been the mother of five children. In 1872 Dr. Russell married, in San Francisco, Ellen M. Brown, daughter of Joseph Brown, Esq. She died on October 14, 1879.

Dr. Russell was a man of indefatigable industry. During his life he probably performed more physical and mental labor than the majority of his contemporaries, in or out of the profession. His work did not begin with the rising or close with the setting sun, and the day usually allotted to rest found him actively engaged. In his early practice he visited his patients on horseback. While on a professional trip near Gambier in 1836 his horse fell on the ice and injured his knee-joint, which resulted in false anchylosis and compelled him to use a crutch afterwards. For a like disability many would have abandoned an active practice, but with him it had no effect, only to intensify his zeal and change his mode of travel. Mules were called into requisition, and with two of these animals and a carriage he scaled the hills of Knox and the adjoining counties for half a century. During the 60 years of his professional life, his instruction was sought by not less than 300 young men preparing to enter the medical profession. He was a most capable and thorough office preceptor. He imparted instruction to his pupils by recitations, dissections, demonstrations, and oral instruction; and by his own exemplary conduct taught them medical ethics. He elicited the profound respect and admiration of his pupils, and inspired them with enthusiasm in their studies. In his journeys to his patients he would take a student, and his text-book, conduct the recitation *en route*, and when darkness or other causes intervened no time would be lost, for now came the memorable quiz over past work, and for which he was truly famous. That his office was an uncomfortable place for a lazy student, and that the doctor had no patience with a man who would not work his brain is shown by an extract from a letter to the late Dr. William Morrow Beach, of London, O.: "For fifty-nine years it has been my happy lot to serve the afflicted conscientiously, faithfully, and I wish I might add judiciously. This I cannot always say. I have prayed for wisdom, and would advise the same to my juniors. The great sin in our profession is *indolence*. A man is responsible not only to do as well as he knows, but to use his faculties to know what to do."

It was in general surgery that he took most interest, and found most pleasure. He regarded anatomical knowledge as the true basis of all success and skill in surgery. Living in a county where it is necessary to be a general practitioner in medicine and surgery, he performed most of the so-called capital operations, such as lithotomy, herniotomy, and all the most important amputations, except that of the hip-joint, and many of the more delicate operations as that for cataract, etc., and with almost uniform success. He was careful to keep pace with the advances of medicine. In all matters he faithfully followed his convictions of duty regardless of the sacrifice of self which such a course might require. He was tendered the Professorship of Surgery in several Medical Colleges, but declined them all, preferring to remain in private practice. He was an active Christian, ever ready to perform those duties which the love of Christ developed upon him. He had an hypertrophied prostate for eighteen years, the pain and other resulting inconveniences of which he bore with fortitude and without a murmur. Retention of urine and uræmia caused his death on March 22, 1887, at the advanced age of 83 years. He died as many had predicted, "in the harness," having prescribed for patients up to within forty-eight hours of his death.

F. C. L.

INTERNATIONAL CONGRESS.

SECTION OF LARYNGOLOGY.

This Section will meet on Monday, September 5, 1887, at 2 o'clock P.M.

OFFICERS.

President, Wm. H. Daly, M.D., Pittsburgh, Pa.

Vice-Presidents, Mr. Lennox Browne, F.R.C.S.E., London, England; Dr. J. Baratoux, Paris, France; Dr. Bouchet, Paris, France; Dr. J. Charazac, Toulouse, France; Dr. Karl Dehio, Dorpat, Russia; Dr. J. J. Kirk Duncanson, Edinburgh, Scotland; Dr. C. M. Desvernine, Havana, Cuba; Dr. Jos. Gruber, Vienna, Austria; Dr. J. H. Hartman, Baltimore, Md.; Dr. Prosser James, London, England; Dr. B. D. Moura, Paris, France; Dr. O. Rosenbach, Breslau, Germany; Dr. E. L. Shurly, Detroit, Mich.; Dr. A. Schnee, Nice, France; Dr. John Schnitzler, Vienna, Austria; Dr. G. V. Woolen, Indianapolis, Ind.; Dr. M'Niel Whistler, London, England; Dr. F. Laborde De Winthuyssen, Sevilla, Spain; Dr. J. O. Roe, Rochester, N. Y.

MEMBERS OF COUNCIL.

Dr. J. Dennis Arnold, San Francisco; Dr. H. Blaikie, Edinburgh, Scotland; Dr. S. N. Benham, Pittsburgh, Pa.; Dr. W. E. Casselberry, Chicago; Dr. Lester Curtis, Chicago; Dr. H. H. Curtis, New York; Dr. Andrew J. Coey, Chicago; Dr. Richard Ellis, Newcastle-on-Tyne, England; Dr. Herman E. Hayd, Buffalo, N. Y.; Dr. Theodore Herring, Warsaw, Poland; Dr. E. Fletcher Ingals, Chicago; Dr. Geo. Mackern, Buenos Ayres, Argentine Republic; Dr. M. C. O'Toole, San Francisco; Dr. S. W. Pearson, Baltimore, Md.

American Secretaries.— Wm. Porter, M.D., St. Louis, Mo.; D. N. Rankin, A.M., M.D., Allegheny, Pa.

German Secretary.—Dr. Ottaker Chiari, Vienna, Austria.

French Secretary.—Dr. E. G. Moure, Bordeaux, France.

DISCUSSIONS.

The following subjects have been selected for special discussion:

1. The Diagnosis and Treatment of Catarrhal Disease of the Antrum of Highmore. To be introduced by Dr. Lennox Browne, London, Eng.

2. Epistaxis. To be introduced by Prof. E. Fletcher Ingals, Chicago, Ill.

3. The Treatment of Laryngeal Papillomata. To be introduced by Prof. W. E. Casselberry, Chicago, Ill.

4. Recurrent Hæmorrhages of the Upper Air-passages. Introduced by Dr. Wm. Porter, St. Louis, Mo.

5. The Diagnostic Differentiation of Recent Tuberculous, Specific, and Rheumatic Laryngeal Disease. Introduced by Dr. E. L. Shurly, Detroit, Mich.

PAPERS.

MONDAY, SEPTEMBER 5—FIRST DAY.

Section meets at 2 o'clock, P.M.

F. B. Eaton, M.D., Portland, Oregon. The present Status of the Galvano-Cautery in the Treatment of the Diseases of the Upper Air-passages; illustrated by improved Forms of Electrodes and Description of Cases.

Richardson Gray, M.D., Orange, N. J. The Galvano-Cautery in the Treatment of Diseases of the Nose and Throat, with description of perfect Battery.

H. H. Curtis, M.D., New York. Surgery of the Nasal Septum and Turbinate Bodies.

John North, M.D., Keokuk, Iowa. The Influence of Disease of the Mucous Membrane of the Upper Air-passages upon the Sympathetic Nervous System.

Richard H. Thomas, M.D., Baltimore. A Contribution to the Causes and Treatment of so-called Hay Fever, Nasal Asthma, and allied Affections, considered from a clinical standpoint.

I. P. Klingensmith, M.D., Blairsville, Pa. Hay Asthma.

D. N. Rankin, M.D., Allegheny, Pa. Some Remarks on the History of Rhinology.

J. Baratoux, M.D., Paris, France. Le catarrh naso-pharyngien.

TUESDAY, SEPTEMBER 6—SECOND DAY.

Section meets at 2 o'clock P.M.

O. Rosenbach, M.D., Breslau, Germany. Ueber nervosen Hustens und seine Behandlung.

A. W. Orwin, M.D., London, Eng. Lupus of the Larynx.

Geo. Mackern, M.D., Buenos Ayres, Argentine Republic. The Earlier Manifestation of Malignant Disease of the Larynx.

F. Laborde De Winthuyssen, M.D., Sevilla, Spain. Le sulfure de calcium dans le traitement de la diphthérie.

R. N. Wolfenden, M.D., London, Eng. Tracheocele.

Paul Koch, M.D., Luxembourg, France. Parasites of the Pharynx and Larynx.

A. Cartaz, M.D., Paris, France. Some Rare Accidents in Tracheotomy.

F. Massei, M.D., Naples, Italy. Primary Erysipelas of the Larynx.

WEDNESDAY, SEPTEMBER 7—THIRD DAY.

Section meets at 2 o'clock P.M.

J. A. Stucky, M.D., Lexington, Ky. Clinical Report on the Treatment of Laryngeal Phthisis.

C. M. Desvernine, M.D., Havana, Cuba. The Longitudinal Tension of the Vocal Cords; its Physiology and its Derangements.

F. Moura, M.D., Paris, France. The Classification of the Muscles of the Larynx.

Ephraim Cutter, M.D., New York. Relations of Phonation to Cantation, with some practical deductions.

Carl Seiler, M.D., Philadelphia. A Case of complete Stenosis of the Larynx, in which Articulation was unintelligible; with complete Restoration of the Voice by Surgical Procedure.

E. Fletcher Ingals, M.D., Chicago, Ill. Chronic Rheumatic Laryngitis.

H. E. Hayd, M.D., Buffalo, N. Y. Sarcoma of the Larynx.

THURSDAY, SEPTEMBER 8—FOURTH DAY.

Section meets at 2 o'clock P.M.

W. E. Casselberry, M.D., Chicago. Ill. Nasal Fibromata.

John O. Roe, M.D., Rochester, N. Y. Chorea Laryngealis.

M. J. Stern, M.D., Philadelphia. Intubation or Tracheotomy.

Bouchet, M.D., Paris, France. Tubage of the Larynx.

Carmalt Jones, M.D., London, Eng. The Action of the Epiglottis in Swallowing.

M. F. Coomes, M.D., Louisville, Ky. The Deleterious Effects of Tobacco on the Throat and Nose.

F. Semeleder, M.D., Mexico. Twenty years of Laryngological work in the City of Mexico.

Geo. Mackern, M.D., Buenos Ayres, Argentine Republic. The Local Treatment of Diphtheritic Membrane by Carbolic Acid and Iodized Steam Inhalations.

FRIDAY, SEPTEMBER 9—FIFTH DAY.

Section meets at 2 o'clock P.M.

A. Schnee, M.D., Nice, France. Cure of Papillomata Laryngis.

J. H. Hartman, M.D., Baltimore. Cystic Tumors of the Epiglottis, their Pathology and Treatment, with report of Cases.

M. C. O'Toole, M.D., San Francisco. The Laryngologist, what should constitute his special practice?

J. O'Dwyer, M.D., New York. The Treatment of Chronic Stenosis of the Larynx and Trachea by Intubation.

A. B. Thrasher, M.D., Cincinnati, O. Resorcin in the Treatment of Nasal Catarrh.

Mr. Lennox Browne, F.R.C.S.E., London, Eng. Recent Views as to the Pathology and Treatment of Tuberculosis of the Throat and Larynx.

A. J. Coey, M.D., Chicago, Ill. The Relation of Asthma to Nasal Irritation.

SECTION IV.—OBSTETRICS.—A meeting of the officers of this Section, including the Vice-Presidents and Members of the Council, will be held in the Georgetown Medical College, corner of 10th and E Sts., Washington, D. C., on *Saturday, September 3d, 1887*, at 3 o'clock, P.M., to consider and arrange the work and details for the Sessions of the Section during the ensuing week.

SECTION XVI.—MEDICAL CLIMATOLOGY AND DEMOGRAPHY.—There will be a meeting of the officers of this Section in the Cornwell building, Pennsylvania avenue, between 14th and 15th streets, at 4 o'clock, P.M., *Saturday, September 3d*, for conference respecting the business of the Section. Officers of the Section should state whether they can be present, and advise Dr. Denison, through the office of the Secretary General, 1421 G St., N. W., Washington, D. C., of their contemplated post-office address in that city.

ALBERT L. GIHON, M.D., *President.*

SECTION OF DISEASES OF CHILDREN.—To the list of papers published last week should be added after the paper by Mr. Noble Smith, "The Principles of Treatment of Club Foot, partly demonstrated by the Exhibition of Apparatus." By Will E. Blackwill, London, England.

SECTION ON OBSTETRICS.—The following should be added to the list of papers already published:

Professor W. S. Stewart, M.D., Philadelphia; 1. Improved Obstetrical Forceps with Parallel Handle. 2. The Importance of Careful Diagnosis of Pregnancy, with the History of a Case of Retroflexion of the Gravid Uterus, Labor at Term.

E. P. Christian, M.D., Wyandotte, Mich., The Proportion and Causes of Still-births.

REDUCED RAILWAY RATES IN CANADA.—The Inter-Colonial Railway Co. will return free of charge members who pay full fare coming over its roads. The Canada Atlantic Railway Co., the Northern and Northwestern Railways, and the Napanee, Tamworth and Quebec, will return members for one-third fare who pay full fare coming.

J.W. H. LOVEJOY, M.D., *Chr'mn Com. on Trans.*

HOTEL ACCOMMODATIONS IN WASHINGTON.—The attention of those who have not completed their hotel arrangements during the Session of the Congress is called to the list of hotels on page 10 of THE JOURNAL Advertiser.

TO THE CONGRESS FROM THE WEST.—Members of the Congress can leave St. Louis, Mo., any morning or evening in Buffet and Pullman palace cars, without change to Washington, via the "Air Line," Chesapeake and Ohio, and Midland Railroad. Members can return by Midland R. R., or from Old Point Comfort. Certificates will be honored at either place and one-third of full fare will be charged for return tickets. Arrangements have been made to give ample time to visit Virginia Beach, Norfolk, Portsmouth, Old Point Comfort, Richmond, Natural Bridge, Luray Caverns, White Sulphur Springs, Louisville Exposition and Mammoth Cave. Reduced rates may be obtained at all hotels to members and friends. For particulars apply to C. Kennedy, "Air Line," St. Louis, Mo., or D. G. Edwards, C. & O. R. R., Cincinnati, Ohio.

Special trains will be run from Chicago via the Baltimore & Ohio Railway, leaving Chicago on September 3, at 3.30 P.M. Full information concerning these trains may be found on page 9 of THE JOURNAL Advertiser.

MISCELLANEOUS.

A CAUSE OF TYPHOID FEVER.—Discussing the distribution of typhoid fever in Oldham, Dr. Niven, the medical officer of health, refers to the well-known tendency of this disease to prevail in the colder rather than in the warmer months. In the case of his district he interprets it by explaining that there is a general influence in operation which is for the most part compared with influences acting specially in the winter months. That general influence he describes as either the admission of sewer air into houses by means of defective drain arrangements, or the action of polluted subsoil water, or the two combined. Open doors and windows in summer reduce to a minimum the evils thus resulting. But in the winter, injurious emanations are drawn into dwellings by the aid of internal warmth and of fires, and the foul air is penned in by reason of closed doors and windows. This explanation has often been referred to by various officers of health, and the circumstances described must be regarded as having an important bearing both upon typhoid fever and other conditions of health. Ventilation of houses is as much needed in winter as in summer, and we should like to see a by-law which requires every house to be built on a site covered with a layer of good cement concrete everywhere adopted and carried out. By such means alone can the suction into dwellings of subsoil air, which is always open to suspicion, be prevented.—*Lancet*, July 23, 1887.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF OFFICERS SERVING IN THE MEDICAL DEPARTMENT, U. S. ARMY, FROM AUGUST 13, 1887, TO AUGUST 19, 1887.

Col. J. H. Baxter, Chief Medical Purveyor, ordered to proceed from Washington, D. C., to New York City, on public business, and on completion thereof, to return to this city. Par. 5, S. O. 187, A. G. O., August 13, 1887.

Major W. D. Wolverton, Surgeon, Washington Bks., D. C., granted leave of absence for twenty days. Par. 3, S. O. 171, Div. Atlantic, August 16, 1887.

Capt. Charles B. Byrne, Asst. Surgeon, Washington Bks., D. C., granted leave of absence for one month, with permission to apply for an extension of one month. Par 4, S. O. 171, Div. Atlantic, August 16, 1887.

Capt. George F. Wilson, Asst. Surgeon, granted leave of absence for fifteen days. S. O. 78, Dept. of Dakota, August 8, 1887.

First Lieut. William D. Dietz, Asst. Surgeon, granted leave of absence for two months, with permission to apply for an extension of one month. Par. 7, S. O. 189, Hdqrs. of the Army, A. G. O., August 16, 1887.

First Lieut. W. D. McCaw, Asst. Surgeon, relieved from temporary duty at Ft. Riley, Kans., and ordered to his proper station, Ft. Leavenworth, Kans. Par. 3, S. O. 84, Dept. Wisconsin, August 15, 1887.

OFFICIAL LIST OF CHANGES IN THE MEDICAL CORPS OF THE U. S. NAVY, DURING THE WEEK ENDING AUGUST 20, 1887.

Medical Inspector S. Robinson, placed on retired list.

P. A. Surgeon J. E. Gardner, detached from Naval Hospital, Norfolk, Va., and ordered to the Fish Commission Str. "Albatross."

Asst. Surgeon Wm. Martin, ordered to Naval Hospital, Norfolk, Va.

Surgeon W. K. Van Reypen, appointed Medical Inspector from August 16, 1887.

P. A. Surgeon M. H. Simons, appointed Surgeon from August 16, 1887.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE HOSPITAL SERVICE FOR THE TWO WEEKS ENDING AUGUST 20, 1887.

Surgeon W. H. Long, leave extended six days on account of sickness. August 13, 1887.

Surgeon C. S. D. Fessenden, granted leave of absence for thirty days. August 19, 1887.

Surgeon John Godfrey, granted leave of absence for thirty days. August 17, 1887.

P. A. Surgeon A. H. Glennan, granted leave of absence for thirty days. August 18, 1887.

Asst. Surgeon W. P. McIntosh, granted leave of absence for twenty-five days, on account of sickness. August 17, 1887.